INDIAN FOOD LAWS

A Summary of the existing
Standards and Specifications
as adopted by different States in India

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FOREWORD

Food is one of the important items that affect the life of the people. Consequently, the prevention of adulteration of food assumes the nature of a major responsibility of the State. This problem has engaged the attention of the Government for nearly a century. As early as 1860 the adulteration of food-stuffs was dealt with under certain sections of the Indian Penal Code. Later, it came under the purview of Municipal Acts passed by some Provinces. The first Prevention of Food Adulteration Bill was introduced in Bombay Province and the Bombay Prevention of Adulteration Act was officially promulgated in 1899. Similar Acts were passed by other States in the following years and, in many cases, the Acts were revised as experience was gained in the administration of the Acts. To-day, of the 27 States in the Indian Union, 22 have either their own Food Laws or are applying the Food Laws of neighbouring States.

Under these Food Laws, standards for several food-stuffs were laid down by the various State Governments from time to time without mutual consultation. As a consequence, considerable differences arose in the standards prescribed by different States for a number of commodities. These variations were increasingly interfering with inter-provincial trade. Realizing this, the Central Advisory Board of Health, Government of India, appointed a Food Adulteration Committee in 1937 to examine this question in detail. To bring about the standardization of the methods of analysis and to recommend suitable standards for different food commodities, the above Committee recommended the formation of an Expert Body called the Central Committee for Food Standards which began to function in 1944. In 1943, the Food Adulteration Committee

also recommended the enactment of a Central legislation in order to ensure uniformity in the enforcement of Food Laws in the different Provinces. With the inclusion of "Adulteration of food-stuffs and other goods" in the concurrent list of the Constitution of the Indian Union, it became possible for the Central Government to enact an all-India legislation on this subject. Accordingly, the Food Adulteration Bill (1952) was introduced in the House of the People in October 1952. After the passing of this Bill, the task of prescribing appropriate standards for all food articles will have to be undertaken.

In this connection it was felt that it would be useful if the information regarding the existing Food Laws and Food Rules which are scattered in several manuals, gazettes and publications of State and Central Governments could be presented in a consolidated form under one cover. This publication is the outcome of such an effort. It covers as far as information could be obtained, all the important details regarding the history and operation of Food Laws, definitions, descriptions and chemical standards of articles of food, permissible additives like colours, flavours and preservatives and labelling of food-stuffs.

A number of tables giving comparative data on chemical standards for foodstuffs as are found in the different Food Laws as well as wherever possible, those prescribed or recommended by the Agricultural Marketing Organization (Agmark), Army Service Corps (A.S.C.), Fair Average Quality Standards (F.A.Q.), the Food Adulteration Committee and the Central Committee for Food Standards, have been prepared and presented in this book. These tables will enable the reader to have a general picture of the chemical standards as prescribed for a given commodity in different parts of the country. The Vegetable Oil Products Control Order which is a Central Order and applies to all India, except

Jammu and Kashmir, is given in a separate chapter for the information of the reader. The important subject of the enforcement of Food Laws is dealt with in the relevant chapter and on page 197. The last chapter contains a survey of the information compiled under various headings in the book.

It may be mentioned that the Food Laws summarized in this book relate mostly to articles of food other than fruit and vegetable products which are governed by the Fruit Products Order, 1947. Information relating to the quality and standards of Fruit & Vegetable Products as prescribed in India and some other countries where this industry is highly developed, will form the subject-matter of a separate monograph.

No attempt has been made in this volume to present or discuss such clauses of the Food Adulteration Acts as refer or relate to legal aspects. The existing provisions for the control of food production and distribution under hygienic and sanitary conditions have also been kept out of the scope of this book.

Our grateful thanks are due to all the State Governments, Ministries of Health, Food and Agriculture and other Departments of the Government of India who readily furnished the required information for the compilation of this book. I also wish to place on record my appreciation of the enthusiasm and pains-taking efforts shown by the authors in bringing out this very useful publication.

Central Food Technological Research Institute, Mysore.
April 24, 1954.

V. SUBRAHMANYAN
Director

NOTE

It is with deep regret that I have to add this note. My friend and colleague, Dr. G. T. Kale, one of the authors, died very suddenly whilst this book was in the press, and did not live to see its publication.

July 30, 1954.

V. S.

CONTENTS

DEFINITIONS OF FOOD AND ITS ADULTERATION

The term "Food" has been defined more or less in a similar manner in the Food Laws or Bills of different States. All the Acts, except that of Coorg, exclude 'drugs' and 'water' from the definition of food. Presumably, therefore, in these States, an article of food shall be deemed not to be 'food' by reason only that it is also capable of being used as drug or medicine. Further, whereas all the Food Laws (except that of Madhya Pradesh) clearly include, in their definition of food, flavouring matters and condiments, those of five States *viz*. Coorg, Hyderabad, Rajasthan (Jaipur and Marwar), Uttar Pradesh and the Punjab include also colouring matter.

The Food Laws in force in Cochin and Coorg include articles used for chewing in their definition of food.

In the U.P., wines, liquors, or other excisable articles (intoxicants) are excluded from the connotation of food. The definitions of food in 16 Food Laws some of which apply to more States than one, are given below:

Assam: "Food" includes every article used for food or drink by man, other than drugs or water, and includes sweetmeats, aerated water, *sharbet*, tea and any article which ordinarily enters into or is used in the composition or preparation of human food, and also includes flavouring matters and condiments.

Bengal: "Food" includes every article used for food or drink by man, other than drug or water, and any article which ordinarily enters into or is used in the composition of human food; and also includes flavouring matters and condiments.

Bombay: The same as above.

Coorg: "Food" includes every article consumed or used by man for food, drink or chewing, and all materials used or admixed in the composition or preparation of such article and shall also include flavouring and colouring matter and condiments.

Hyderabad: The same as for Bengal.

Madhya Bharat (Indore): "Food" includes every article used for food or drink by man, other than drugs or water, and every article which ordinarily enters into or is used in the composition or preparation of human food, and shall also include flavouring matters and condiments.

Madhya Pradesh: "Food" includes every article used for food or drink by man, other than drugs or water.

Madras: "Food" includes every article (other than drugs or water) used by man for food or drink and all material used or admixed in the composition or preparation of such article and shall also include flavouring matter and condiments.

Mysore: The same as above.

Orissa: "Food" means any article used for food or drink by men, other than drugs or water, and includes, any article which ordinarily enters into or is used in the composition or preparation of human food, and also includes flavouring matters and condiments.

Punjab: "Food" includes every article used for food or drink by man other than a drug and an article which enters into the composition or is used in the preparations of any such article and also includes flavouring and colouring matters and condiments.

Rajasthan (Jaipur): "Food" includes every article (other than a drug or water) used by man for food or drink and any article which ordinarily enters into or is used in the composition or preparation of human food and also includes flavouring and colouring matters and condiments.

Rajasthan (Marwar): "Food" includes every article used for food or drink by man other than a drug and any article which enters into the composition or is used in the preparation of any such article and also includes flavouring and colouring matters and condiments.

Travancore-Cochin (Cochin): "Food" includes every article (other than drugs or water) used by man for food, drink or chewing and all materials ordinarily used or admixed in the composition or preparation of such articles and includes also flavouring matter and condiments.

Travancore-Cochin (Travancore): "Food" means every article (other than drug or water) used by man for food or drink and all materials ordinarily used or admixed in the composition or preparation of such articles and includes also flavouring matter and condiments.

Uttar Pradesh: "Food" means any article of food or drink, other than drug, water, wine, liquors or other excisable articles (intoxicants) used for human consumption including (i) any substance which is ordinarily mixed in the preparation of food, (ii) any flavouring matter or condiment, and (iii) any colouring matter used or intended to be used in food.

ADULTERATION OF FOOD

Assam: An article of food shall be deemed to be "adulterated"—

(i) if, in any one or more of the following respects, namely, nature, substance, consistency, colour, smell or quality, it is not the same as such food in its pure and normal state, or as it purports or is represented to be; or

(ii) if any ingredient or material has been added to increase the bulk, weight or measure, or to conceal the inferior quality of the food; or

(iii) if any part of it has been abstracted so as to diminish its nutritive value or to affect injuriously its nature, substance or quality; or

(iv) if, it is decayed, putrefied, weevil-infested or is otherwise unfit for human consumption; or

(v) if it does not comply with any standard laid down by or under this Act or any other law for the time being in force; or

(vi) if it contains or is mixed or diluted with any substance in such quantity as is to the prejudice of the purchaser or consumer or in such proportion as diminishes in any manner the food value or nutritive qualities which it possesses in its pure, normal and undeteriorated condition.

Bengal: An article of food shall be deemed to be "adulterated" if it has been mixed or packed with any other substance, or if any part of it has been abstracted so as, in either case, to affect injuriously its quality, substance or nature.

Madhya Bharat (Indore): An article of food shall be deemed to be "Adulterated or Impoverished" if it has been mixed with any other substance, or if any part of it has been abstracted so as, in either case, to affect injuriously its quality, substance or nature.

PEPSU: Any food shall be deemed to be adulterated

(i) if it contains or is mixed or diluted with any substance

which diminishes in any manner its nutritive or other beneficial properties as compared with such food in a pure and normal state or which, in any other manner, operates or may operate to the prejudice or disadvantage of the purchaser or consumer;

(ii) if any substance or ingredient has been extracted or omitted therefrom, and by reason of such extraction or omission the nutritive or other beneficial properties of the food as sold are less than those of the articles in its pure and normal state or the purchaser or consumer is or may be in any other manner prejudiced thereby;

(iii) if it contains or is mixed or diluted with any substance of lower commercial value than such food in a pure and normal state;

(iv) if it does not comply with the standard prescribed by any rules made under this Act.

Punjab: The same as above.

Rajasthan (Jaipur): Any food or drug shall be deemed to be adulterated

(i) if it contains or is mixed or diluted with any substance which diminishes in any manner its nutritive or other beneficial properties as compared with such food or drug in a pure and normal state or which in any other manner operates or may operate to the prejudice or disadvantage of the purchaser or consumer;

(ii) if any substance or ingredient has been extracted or omitted therefrom, and by reason of such extraction or omission the nutritive or other beneficial properties of the food or drug as sold are less than those of the article in its pure and normal state, or the purchaser or consumer is or may be in any other manner prejudiced thereby;

(iii) if it contains or is mixed or diluted with any substance of lower commercial value than such food or drug in a pure and normal state;

(iv) if it is not of the nature, substance or quality it purports to be or does not comply with the standard prescribed by any rules made under this Act.

(Marwar): The same as for PEPSU.

Travancore-Cochin (Travancore): "Adulteration" with its grammatical variations and cognate expressions means the addition of any substance to a notified article so as to affect its nature, colour, substance, quality, or any other specification.

DEFINITIONS, DESCRIPTIONS AND CHEMICAL STANDARDS OF FOOD-STUFFS

AERATED WATER AND SODA WATER

Bombay: Lemonades, lime and fruit juices, syrups, beverages and aerated drinks shall not contain tartaric acid (except in grape juice) and more than a trace of phosporic acid, and extraneous matter not usually present in pure juice or lead.

Sweet aerated water shall not contain saccharine in proportion exceeding 143 parts per million or half a grain per 8 ounces.

Orissa: Aerated water shall be deemed to be below the standard of purity if it is manufactured from water which is unfit for drinking purposes or if ice manufactured from such water is inserted in it.

Water for the purposes of this rule will be deemed to be unfit for drinking purposes if it contains any ingredient or extraneous matter which is unwholesome or noxious.

Uttar Pradesh: Aerated water other than soda water shall be potable water, sweetened with sugar, impregnated with carbon-dioxide, or oxygen or with both, under pressure, with or without admixture of salts of sodium, potassium, lithium, magnesium or calcium, singly or in combination, and of the prescribed flavouring and colouring substances and shall not contain any lead or other poisonous metal or any other added substance including saccharine and other synthetic sweetening substances.

Soda water shall be potable water impregnated with carbon-dioxide or oxygen or with both, under pressure, with or without admixture of salts of sodium, potassium, lithium, magnesium or calcium, singly or in combination, or of sodium bi-carbonate and shall not contain any lead or other poisonous metal or any other added substance.

ASAFOETIDA

Bombay: Asafoetida means the oleo-gum-resin obtained from the rhizome and root of *Ferula foetida, Ferula rubricaulis,* and other species of *Ferula.*

Asafoetida shall not contain woody or vegetable fibre, sand,

gravel or other foreign mineral matter, and shall conform to the following standards: (*a*) ash not more than 20%, (*b*) extract soluble in 90% alcohol not less than 25%, and (*c*) shall not contain colophony resin, galvanum resin, ammoniacum resin or any other foreign resin.

BAKING POWDER AND SELF-RAISING FLOUR

Bombay: Baking powder shall not contain (i) more than one part per million of arsenic, lead, sodium or potassium aluminium sulphate, and (ii) more than ten per cent of acid phosphates.

Uttar Pradesh: Self-raising flour shall be the flour to which the ingredients of baking powder have been added. It shall liberate not less than 0·64 per cent by weight of carbon dioxide when moistened and heated, and shall contain not more than 0·6 per cent of sulphates calculated as calcium sulphate. It shall not contain any other added substance.

BISCUITS

Specifications for biscuits have not been prescribed by any of the State Governments. The specification prescribed by the Army Service Corps is given below:—

Quality: (i) The biscuits – service shall be manufactured in two types, sweet and saltish in accordance with the two recipes given below:—

	Sweet	Saltish
Atta	100	100
Flour	100	100
Sugar	45	15
Oil Hydrogenated	35	35
Common salt	2½	5
Sodium bicarbonate/Ammonium bicarbonate	4	4
Fresh milk	5	5
Water	45	45

The quantities of sodium bicarbonate, ammonium bicarbonate and water may be varied, if required. Equivalent quantity of whole milk powder may be used if fresh milk is not available. (ii) Each ingredient as regards its quality shall conform to the

relevant ASC specification. (iii) The biscuits-service shall be fresh, pleasant to taste and free from rancidity. They shall be well baked but not charred and well cut and shall be of good texture. They shall be free from weevils, moulds and any other substances injurious to health. (iv) The biscuits shall be baked flat to measure approximately $1\frac{1}{2} \times 2\frac{3}{4}$ inches. The nett weight of 12 biscuits in a packet shall be 4 oz. with a tolerance of 1/8 oz. on either side.

BUTTER

Assam: Butter shall be exclusively derived from milk or cream (other than condensed, sterilized, or desiccated milk or cream) or both, with or without salt or other preservative, and with or without the addition of colouring matter being of such a nature and in such quantity as not to render the article injurious to health, and it shall not contain a greater proportion of water than may be prescribed by the Provincial Government in this behalf.

Bengal: Butter shall be exclusively derived from milk or cream (other than condensed, sterilized or desiccated milk, or cream), or both, with or without salt, or other preservative, and with or without the addition of colouring matter, such preservative or colouring matter being of such a nature and in such quantity as not to render the article injurious to health, and shall not contain a greater proportion of water than may be prescribed by the State Government in this behalf.

Bihar: Butter for the purposes of these rules is the butter made exclusively from milk, curd or cream or both, with or without the addition of salt or other preservative and of innocuous colouring matter.

Bombay: "Butter" means butter prepared exclusively from milk or cream of the cow or buffalo or both, with or without the addition of common salt.

Coorg: "Butter" means butter made exclusively from milk or cream or both, with or without the addition of salt or other innocuous preservative, or of innocuous colouring matter.

Madhya Bharat (Indore): The word "Butter" shall mean the substance known as butter made exclusively from milk, cream or

both, with or without salt or other preservatives and without the addition of colouring matter. (The Rules state that no preservative except salt shall be used.)

"Imitation Butter" shall mean all substances whether compounds otherwise prepared in imitation of butter, and whether mixed with ghee or butter or both or not.

Madhya Pradesh: "Butter" means the butter prepared exclusively from the milk or cream, with or without the addition of salt or of innocuous colouring material.

Madras: "Butter" means butter made exclusively from milk or cream or both, with or without the addition of salt or other innocuous preservative or of innocuous colouring matter.

Mysore: "Butter" means butter made exclusively from milk or cream or both, with or without the addition of salt or other innocuous colouring matter. No preservative except salt shall be used.

Orissa: "Butter" means butter made exclusively from milk or cream or both, with or without the addition of salt or other innocuous preservative or of innocuous colouring matter.

PEPSU: The substance known as butter shall be made exclusively from the milk of cows or buffaloes.

Punjab: Same as above.

Rajasthan: (Jaipur and Marwar) Same as above.

Travancore-Cochin (Cochin): "Butter" means butter made exclusively from milk or cream or both or from curds with or without the addition of salt or other innocuous preservative, or of innocuous colouring matter.

Travancore-Cochin (Travancore): "Butter" means butter made exclusively from milk or cream or both or from curds, with or without the addition of common salt or of the colouring matter "annato".

In the case of butter made exclusively from cow's milk in the usual indigenous way, no sample shall be presumed to be genuine if it contains any added colouring matter whatsoever.

Uttar Pradesh: Butter means butter exclusively derived from cow's milk, buffalo milk, goat milk or ewe milk.

Agmark (Govt. of India): Butter shall be derived only from clean and wholesome cream obtained from the milk of cows or buffaloes or both, with or without the addition of clean dairy salt (not exceeding 2 per cent). The butter shall contain no preservative.

Flavour—Butter shall be clean, pleasant and free from objectionable taint or rancidity.

Texture—At 60°F., butter should be firm, neither greasy nor oily and show a uniform fine granular surface on breaking.

Colour—Butter shall be uniform and not showing streakiness, mottling, stains or signs of curd.

SPECIAL CHARACTERISTICS: *Select (pasteurized) table butter* shall be made from pasteurized cream. The product shall be of good keeping quality and show no appreciable signs of deterioration in flavour, if retained at 80°F, for 15 days.

Select table butter shall be of reasonably good keeping quality and show no appreciable signs of deterioration in flavour, if retained at 80°F. for 3 days.

Army Service Corps (Govt. of India): (i) Butter shall be the fat obtained from the milk of cows or buffaloes, clean, well-made, sound, and of pleasant flavour.

(ii) Butter shall be fresh and shall not contain renovated butter.

(iii) Butter shall be free from adulteration with foreign fats or oils or other substances like filling materials, harmful colouring matter or preservatives other than common salt.

N.B.—The **Food Adulteration Committee** (1939), Government of India, recommended the following definition of butter: "Butter means butter prepared exclusively from the milk or cream of the cow or buffalo, or both, with or without the addition of salt, or of innocuous colouring matter."

REMARKS

While it is permissible to make butter from the milk derived from goat or sheep in Orissa, Travancore and U.P., in the case of Bombay, Madras, PEPSU., Punjab, Rajasthan (Jaipur and Marwar) and the AGMARK and Army Specifications, butter should be made from the milk of cow or buffalo only. In Assam, Bihar and Bengal the animals from which milk should be derived are not specified. In most of the States, the addition of innocuous preservative to butter is permitted. According to the AGMARK and ASC specifications and the Rules prescribed by Mysore and Madhya Bharat (Indore), addition of preservatives other than salt is forbidden.

CHEMICAL STANDARDS FOR BUTTER*

Sl. No.	Authority	Moisture not more than %	Fat Not less than %	Saponification Value			Reichert Value			Free fatty acid %	Curd not more than %	Casein not more than %	Salt not more than %
				Cow's	Buffalo's	Mixed	Cow's	Buffalo's	Mixed				
1	Assam	20·0	—	222	224	224	24	30	28	2·5	—	—	—
2	Bengal	20·0	—	—	—	—	—	—	—	—	—	—	—
3	Bihar *(a)*	16·0	—	—	—	—	—	—	—	—	—	—	—
4	Bombay *(b)*	16·0	—	—	—	—	—	—	—	—	—	—	—
5	Coorg	20·0	—	—	—	—	(28	28	28)*(h)*	—	—	—	—
6	Hyderabad	—	—	—	—	—	—	—	—	—	—	—	—
7	Madhya Bharat (Indore)	16·0	—	—	—	—	—	—	—	—	—	—	—
8	Madhya Pradesh *(c)*	16·0	—	—	—	—	—	—	—	—	—	—	—
9	Madras	20·0	—	—	—	—	—	—	—	—	—	—	—
10	Mysore *(d)*	20·0	—	—	—	—	—	—	—	—	—	—	—
11	Orissa *(e)*	16·0	—	—	—	—	(24	24	24)*(h)*	—	—	—	—
12	PEPSU	16·0	80·0	—	—	—	—	—	—	—	—	—	—
13	Punjab	16·0	80·0	—	—	—	—	—	—	—	—	—	—
14	Rajasthan: Jaipur	16·0	80·0	—	—	—	—	—	—	—	—	—	—
	Rajasthan: Marwar	16·0	80·0	—	—	—	—	—	—	—	—	—	—
15	Travancore-Cochin: Cochin	20·0	—	—	—	—	—	—	—	—	—	—	—
	Travancore-Cochin: Travancore *(f)*	16·0	—	—	—	—	—	—	—	—	1·0	—	—
16	Uttar Pradesh	16·0	80·0	(222	222	222)*(h)*	24	30	28	—	—	1·0	—
17	(Govt. of India)												
	(i) Agmark *(g)*												
	(a) Select (Pasteurized) table butter-Red Label	16·0	—	—	—	—	—	—	—	—	—	—	2·0
	(b) Select Table butter-Blue-Label	16·0	—	—	—	—	—	—	—	—	—	—	2·0
	(ii) ASC	16·0	—	—	—	—	—	—	—	1·0	—	—	3·0

* The **Food Adulteration Committee** (1939), Government of India, recommended that the standards for ghee which were prescribed as a guide, should apply in the case of *butter fat*.

(*a*) The fat clarified butter, *i.e.*, ghee prepared from it shall conform to the analytical values for ghee of the respective nature.

(*b*) Salted butter shall contain not more than 18% moisture. Fat separated from butter shall conform to the specifications prescribed for ghee.

(*c*) It shall have the same standard of purity as ghee so far as fat is concerned.

CATECHU (*KATHA*)*

Uttar Pradesh : Catechu shall be the dried aqueous extract prepared from the heartwood of *Acacia catechu*. It shall conform to the analytical standards as specified below :

(i) When dried to constant weight at 100°C., it shall not lose more than 12 per cent of its weight.

(ii) It shall not yield more than 8 per cent ash.

(iii) After complete extraction with water and drying at 100°C., it shall not leave more than 10 per cent of alcohol-insoluble residue.

COFFEE

Assam : Coffee shall be the seeds of cultivated varieties of *Coffee Arabica*, *C. Liberica* and *C. robusta*, which must have the characteristic appearance under the microscope.

Green, raw or unroasted coffee shall be coffee seed freed from all but a small portion of its spermoderm and shall conform in variety and place of production to the name it bears.

Roasted coffee shall be properly cleaned green coffee seed which by the action of heat (roasting) has become brown and has developed its characteristic aroma, and shall not contain any admixture of other substances than coffee.

Bihar : Coffee means the seed of cultivated varieties of *Coffee Arabica*, *C. robusta* and *Coffee Liberica*.

Green, raw or unroasted coffee is coffee freed from all but a small portion of its spermoderm and conforms in variety and in place of production to the name it bears.

Roasted coffee means properly cleaned green coffee which by the action of heat (roasting) has become brown and has

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* The entire clause regarding catechu has been deleted from the U. P. Pure Food Rules, 1952, by section 14 of Notification No. 7503/(1)—XVI (PH)—720–52 dated 10-1-1953, published in the U.P. Gazette dated 17-1-53, Part I-A.

(*d*) Rules intended to be used in the case of ghee samples shall also apply to butter which may be clarified into ghee for this purpose. No preservative shall be added.

(*e*) B. R. reading shall be 40–42 at 40°C.

(*f*) Butter made in the usual indigenous way shall not contain more than 20% moisture.

(*g*) Applies to Creamery Butter only.

(*h*) This refers to "butter" irrespective of the animal from which it is obtained.

developed its characteristic aroma and does not contain any admixture of other substances than coffee.

(i) No coffee sold or prepared for sale as 'green', 'raw' or 'unroasted' coffee shall contain any beans or seeds other than those specified above and shall be free from any artificial colouring matter and from coating, facing or glazing substances.

(ii) The pure ground coffee shall be the product of roasted coffee bean only, containing no added husk or other substances, and shall be in sound dry condition free from coating, facing or glazing substances.

(iii) A coffee mixture shall be pure ground coffee, mixed with roasted and ground chicory and shall be in sound dry condition with no rancid or obnoxious flavour.

Bombay: "Coffee" means the seeds of *Coffee Arabica* or *Coffee Liberica*, or *Coffee robusta*.

"Roasted coffee" means the roasted seeds of coffee.

"Ground coffee" means exclusively the roasted seeds of coffee, crushed or ground or otherwise prepared so as to be suitable for making an infusion or decoction.

Coffee or ground coffee shall not contain any foreign substance.

"Coffee and Chicory" means a mixture of ground coffee and chicory, and shall not contain any foreign substance.

Coorg: Coffee shall be the seed of cultivated varieties of *Coffee Arabica*, *C. Liberica* and *C. robusta*.

Green, raw or unroasted coffee shall conform in variety and place of production to the name it bears.

Roasted coffee shall be properly cleaned green coffee which, by the action of heat (roasting), has become brown and has developed its characteristic aroma and shall not contain any admixture of other substances than coffee.

Coffee, whether sold or prepared for sale as green, raw or unroasted coffee, or as roasted coffee, shall be free from any artificial colouring matter and from any coating, facing or glazing substance.

Madhya Pradesh: Green coffee or raw coffee or roasted coffee shall contain the seeds of *C. Arabica* (Mocha coffee), *C. Liberica* (Liberian coffee) and *C. robusta* and no other seeds

or beans and shall be free from any artificial colouring matter and from any coating, facing or glazing substance.

Pure ground coffee shall contain no foreign substance such as starches, sugars, powdered roots, tubers, cereals, leguminous and other seeds, etc., and shall be free from impurities such as sand, mineral matters, etc. Its microscopical examination should disclose no trace of extraneous matter.

Madras: Coffee shall be the seed of cultivated varieties of *Coffee Arabica*, *C. Liberica* and *C. robusta*.

Green, raw or unroasted coffee shall conform in variety and place of production to the name it bears.

Roasted coffee shall be properly cleaned green coffee which by the action of heat (roasting), has become brown and has developed its characteristic aroma, and shall not contain any admixture of other substances than coffee.

Coffee whether sold or prepared for sale as green, raw or unroasted coffee, or as roasted coffee, shall be free from any artificial colouring matter and from any coating, facing or glazing substance.

Mysore: "Coffee" means the seed of cultivated varieties of *C. Arabica*, *C. Liberica* and *C. robusta*.

Green, raw or unroasted coffee is coffee freed from all but a small portion of its spermoderm, and conforms in variety and in place of production to the name it bears.

Roasted coffee means properly cleaned green coffee which, by the action of heat (roasting), has become brown and has developed its characteristic aroma and shall not contain any admixture of other substances than coffee.

PEPSU: Coffee shall be the seed of cultivated varieties of *C. Arabica*, *C. Liberica* and *C. robusta*. The seeds must have characteristic appearance under the microscope.

Green coffee, raw coffee, or unroasted coffee shall be coffee seed freed from all but a small portion of its spermoderm and conforming in variety and in place of production to the name it bears. The seeds must have the characteristic appearance under the microscope.

Roasted coffee shall be properly cleaned green coffee seed which, by the action of heat (roasting), has become brown and has developed its characteristic aroma. The seeds must have the characteristic appearance under the microscope.

French coffee, tablet coffee or coffee mixed with chicory shall be a mixture of coffee seed with chicory in equal proportion.

Punjab: Coffee shall be the seed of cultivated varieties of *C. Arabica, C. Liberica* and *C. robusta.*

Green coffee, raw coffee or unroasted coffee shall be coffee seed freed from all but a small portion of its spermoderm and conforming in variety and in place of production to the name it bears.

Roasted coffee shall be properly cleaned green coffee seed which, by the action of heat (roasting), has become brown and has developed its characteristic aroma.

French coffee, tablet coffee or coffee mixed with chicory shall be a mixture of coffee seed with chicory in equal proportion.

Travancore-Cochin (Cochin): Coffee shall be the seed of cultivated varieties of *Coffee Arabica, Coffee Liberica* and *Coffee robusta.*

Green, raw or unroasted coffee shall be coffee free from all but a small portion of its spermoderm, and shall conform in variety and place of production to the name it bears.

Roasted coffee shall be properly cleaned green coffee which, by the action of heat (roasting), has become brown and has developed its characteristic aroma, and shall not contain any admixture of other substance than coffee.

Travancore-Cochin (Travancore): "Coffee" means the seed of cultivated varieties of *Coffee Arabica, C. Liberica* and *C. robusta.*

Green, raw or unroasted coffee is coffee free from all but a small proportion of its spermoderm and conforms in variety and in place of production to the name it bears.

Roasted coffee means properly cleaned green coffee which by roasting has become brown and has developed its characteristic aroma and shall not contain any admixture of other substances.

"Ground coffee" or "Coffee powder" means roasted coffee crushed or ground or otherwise prepared so as to be suitable for making an infusion or decoction.

"French coffee" or "Coffee with chicory" means the mixture of ground coffee and chicory, the latter not exceeding fifty per cent of the mixture.

Uttar Pradesh: Raw coffee is the seed of cultivated varieties of *Coffee Arabica*, *Coffee robusta* and *Coffee Liberica*,

Green, raw or unroasted coffee is coffee freed from all but a small portion of its spermoderm and conforms in variety and in place of production to the name it bears.

Roasted coffee is the properly cleaned green coffee which, by the action of heat (roasting), has become brown and has developed its characteristic aroma.

"Ground Coffee" shall be the product of roasted coffee beans only and shall not contain any husk or other substance, and shall be in sound, dry and fresh condition with no rancid or obnoxious flavour.

"Coffee mixture" shall be the pure ground coffee mixed with roasted and ground chicory and shall be in a sound and fresh condition with no rancid or obnoxious flavour.

No coffee sold or offered, exposed or stored, by whatsoever description known, shall contain any beans or seeds other than those specified above and shall be free from any artificial colouring matter and from any coating, facing or glazing substance.

Army Service Corps (Govt. of India): (i) The Coffee Ground shall consist of sound, well-roasted and ground berries, from which the seed coat has been removed. The Coffee Ground should be prepared solely from the varieties of berry hereafter specified and according to the following proportion:—

(*a*) Peaberry.....7·5%
(*b*) Plantation A.....62·5%
(*c*) Plantation B.....22·5%
(*d*) Plantation C..... 7·5%

(ii) The berries used shall be of even size, fresh, free from admixture, mould, weevils, foreign berries and injurious constituents.

(iii) The Coffee Ground shall be properly processed, roasted and ground immediately before packing.

(iv) The Coffee Ground shall not contain chicory or other admixture and shall be free from mould, weevils, excess moisture and other injurious constituents.

(v) The Coffee Ground shall produce a beverage of pleasant taste and good characteristic flavour when prepared.

The warranty period shall be six months.

Indian Coffee Board (Govt. of India): *Grade designations of Arabica Plantation Coffee for sale at pool auctions :*

Grading :

1. Plantation A: Eighty-five per cent by weight shall stand on a sieve with round holes of 6·65 mm. Not more than 1½ per cent by weight shall pass through a sieve with round holes of 6·00 mm.

2. Plantation B : At least 75% by weight shall stand on a sieve with round holes of 6·00 mm. Not more than 1½ per cent by weigh shall pass through a sieve with round holes of 5·50 mm.

3. Plantation PB : Flats shall not contain "PB", subject to a tolerance of 2% by weight.

"PB" shall not contain Flats, subject to a tolerance of 2% by weight.

Tolerance in Garbling : by weight.

2% "Peaberry Tr." in "PB"
3% Triage in "A"
3% Triage in "B"

Definition of Certain Grades :

Triage– Broken, Withered, Spotted, Elephant, Discoloured and Mal-formed beans. Triage shall be free from Blacks.

Bits– Broken Coffee of less than 1/3 of a bean in size.

Blacks– More than half of surface black, blue, brown or similarly discoloured.

N. B.— The **Central Committee for Food Standards,** Government of India, in its second meeting held in New Delhi from 6th to 8th November 1944, recommended the following definitions for raw, roasted and ground coffee :

Coffee means the seed of cultivated varieties of *Coffee Arabica, C. Robusta* and *Coffee Liberica.*

Green, raw or unroasted coffee is coffee freed from all but a small portion of its spermoderm and conforms in variety and in place of production to the name it bears.

"Roasted coffee" means properly cleaned green coffee which by the action of heat (roasting) has become brown and has developed its characteristic aroma and shall not contain any admixture of other substances than coffee.

No coffee sold or prepared for sale as "green" "raw" or "unroasted" coffee or as "roasted" coffee shall contain any beans or seeds other than those specified above and shall be free from any artificial colouring matter and from any coating, facing or glazing substances.

Pure ground coffee shall be the product of roasted coffee beans only, containing no added husk or other substances, and, shall be in sound, dry free condition with no rancid or obnoxious flavour.

Coffee mixture shall be pure ground coffee mixed with roasted and ground chicory and shall be in sound dry free conditions with no rancid or obnoxious flavour.

Sale of adulterated coffee in cup should also be prohibited.

CHEMICAL STANDARDS FOR COFFEE *

Sl. No.	Authority	Moisture not more than %	ASH			Description	Aqueous extract not less than %	Aqueous extract per g. of coffee in terms of N/10 NaOH ml.	Caffeine %	Fat (Petroleum ether extract) %	Nitrogen %
			Total %	Insoluble in Water %	Insoluble in Dil. HCL						
1	Assam	—	—	—	—	—	—	1·8-2·2	—	—	—
2	Bengal	—	—	—	—	—	—	—	—	—	—
3	Bihar	Nil	4-5·5	1-1·2	Nil	‡	26	1·8-2·2	1-1·3	10-12	—
4	Bombay (*a*)	—	Not more than 5%	—	trace	—	21·5-26·5	—	—	—	—
5	Coorg	—	—	—	—	—	—	—	—	—	—
6	Hyderabad	—	—	—	—	—	—	—	—	—	—
7	Madhya Bharat (Indore)	—	—	—	—	—	—	—	—	—	—
8	Madhya Pradesh 1 } 6 }	(*b*)	3–5	—	Nil	Bluish	21-26	—	1-1·3	10-12	2-2·75
9	Madras	—	—	—	—	—	—	—	—	—	—
10	Mysore	—	4–5 (*c*)	1·4 (not more than)	—	—	30	—	—	—	—
11	Orissa	6	3·5-5	—	—	—	21	—	—	—	—
12	PEPSU	—	—	—	—	—	—	—	—	—	—
13	Punjab	—	—	—	—	—	—	—	—	—	—
14	Rajasthan										
	Jaipur	—	—	—	—	—	—	—	—	—	—
	Marwar	—	—	—	—	—	—	—	—	—	—
15	Travancore-Cochin										
	Cochin	6	3·5–5	—	—	—	21–26	—	1·0-1·3	—	—
	Travancore	1	3–5 (*c*)	—	—	—	—	—	—	—	2-2·75
16	Uttar Pradesh	—	4-5·5	1-1·2	—	‡	26	1·8-2·2	1-1·3	10-12	—
17	(Govt. of India) ASC	4	5 (*d*) (not more than)	—	0·1	—	20-24·5 (*e*)	—	0·8 (not less than)	10·5	—

* The **Central Committee for Food Standards,** Government of India, at its second meeting held in New Delhi in November 1944 recommended the following standards for coffee: total ash (feathery white or bluish white in colour), 4-5·5%; ash insoluble in water, 1-1·2%; ash insoluble in dil. HCl, Nil; minimum aq. extract, 26%; caffeine, 1-1·3%; aq. extract in terms of N/10 NaOH, 1·8-2·2 ml.; and fat (petroleum ether extract), 10-12%.

‡ Feathery white or bluish white.

(*a*) Coffee shall not contain starch. At least 70% of ash should be soluble in water.

CHEMICAL STANDARDS FOR COFFEE MIXTURE*

Sl. No.	Authority	Chicory not more than %	ASH			Colour	Aqueous extract not less than %	Acidity of aqueous extract, N/10 NAOH ml.	Caffeine %
			Total %	Insoluble in Water less than %	Insoluble in Dil. HCL less than %				
1	Assam	50	—	—	—	—	—	—	—
2	Bengal	—	—	—	—	—	—	—	—
3	Bihar	50 (less than)	4·8-7·7	4	1·3	May be coloured	26	2·2-2·5	0·5-0·7
4	Bombay	—	—	—	—	—	—	—	—
5	Coorg	50	—	—	—	—	—	—	—
6	Hyderabad	—	—	—	—	—	—	—	—
7	Madhya Bharat (Indore)	—	—	—	—	—	—	—	—
8	Madhya Pradesh	—	—	—	—	—	—	—	—
9	Madras	50	—	—	—	—	—	—	—
10	Mysore	50	—	—	—	—	—	—	—
11	Orissa	—	—	—	—	—	—	—	—
12	PEPSU	50	—	—	—	—	—	—	—
13	Punjab	50	—	—	—	—	—	—	—
14	Rajasthan { Jaipur	—	—	—	—	—	—	—	—
	Rajasthan { Marwar	—	—	—	—	—	—	—	—
15	Travancore-Cochin { Cochin	—	—	—	—	—	—	—	—
	Travancore-Cochin { Travancore	50	—	—	—	—	—	—	—
16	Uttar Pradesh	50 (less than)	4·8-7·7	4	1·3	May be coloured.	26	2·2-2·5	0·5-0·7

CONFECTIONERY

Uttar Pradesh: *Confectionery* shall be a product made from sugar, glucose or other carbohydrate sweetening substance with or without the addition of the permissible colouring or flavouring substances such as ghee, hydrogenated vegetable fat, edible oils, milk, chocolate, nuts and fruits, but shall not contain any alcoholic liquor.

(*b*) Moisture not more than 6 per cent in unroasted coffee and not more than 1 per cent in roasted and ground coffee.

(*c*) Total alkalinity of ash as K_2O shall be 1·8–2·2%.

(*d*) At least 60% of ash shall be water soluble.

(*e*) Cold water extract.

* The **Central Committee for Food Standards,** Government of India, at its second meeting held in New Delhi in November 1944 recommended the following standards for coffee mixture (containing less than 50% chicory): total ash (may be coloured) 4·8–7·7%; ash insoluble in water, less than 4%; ash insoluble in dil. Hcl, less than 1·3%; aq. extract. not less than 26%; caffeine, 0·5–0·7%; acidity of the aq. extract in terms of N/10 NaOH, 2·2–2·5 ml.

Barfi, *pera* and other such sweets prepared from *khoa* shall contain not less than one-third by weight of *khoa*. The minimum milk fat in a sample of sweetmeat prepared from milk products shall not be less than 5 per cent.

Where a sweetmeat, savoury or other article of food is fried or otherwise cooked in ghee, hydrogenated vegetable oil or any edible oil, such ghee, hydrogenated vegetable oil or edible oil shall, for the purposes of this rule, be deemed to be an ingredient of the sweetmeat, savoury or other article of food.

Army Service Corps (Govt. of India): *Groundnuts roasted and sugar-coated*: (i) Kernels, whole and free from brokens obtained from groundnuts roasted, and conforming to specification No. 28 (New Series), shall be used for sugar coating. (ii) The sugar used shall conform to ASC specification No. 188 (New Series). (iii) Each nut shall be completely covered with sugar, but the proportion of sugar in the finished material shall not exceed half of the total weight of the sugar-coated nuts. (iv) The finished product shall be of pleasant taste and smell. (v) The warranty period shall be 12 months.

Hard Boiled Sweets: (i) The hard boiled sweets shall be of best quality as approved by the Director of Supplies and Transport and may be the proprietary product of any firm. (ii) The hard-boiled sweets shall be free from harmful colouring and flavouring materials or other ingredients injurious to health.

CURRY POWDER

Assam: Curry powder should consist of only a mixture of all or some of the spices noted below :—

"Black pepper, cinnamon, cloves, coriander, cardamom, chillies, cumin seeds, fenugreek, garlic, ginger, mustard, poppy-seeds and turmeric." In addition, it may contain not more than a total of 10 per cent by weight of farinaceous material and not more than a total of 5 per cent by weight of salt or any other substance of the nature of spices.

Bombay: Curry Powder shall not contain lead in amounts exceeding 5 parts per million as lead.

Uttar Pradesh: "Curry Powder" shall consist of a mixture of all or any of the spices specified below and may in addition contain not more than a total of 15 per cent by weight of farinaceous matter and salt or any other substance not of the nature of spices:

Black pepper, cinnamon, cloves, coriander, cardamom, chillies, cumin seeds, fenugreek, garlic, ginger, mustard, poppy seeds, turmeric, nutmeg, mace, curry leaves, white pepper, saffron and aniseed.

Curry powder shall not contain more than 2·6 parts per million of lead.

N.B.—The **Central Committee for Food Standards,** Government of India, at its sixth meeting held in New Delhi in August **1951**, adopted the following specification for curry powder.

"Curry powder shall contain not less than 85% by weight of condiments and spices belonging to the group of aromatic herbs and seeds and shall not contain more than 15% by weight of farinaceous matter and salt. If the manufacturer includes any spices, condiments, or any substance other than the aromatic herbs and seeds enumerated below, the exact nature of such added ingredient or ingredients shall be specified on the wrapper or label prominently and such additions shall be made in lieu of, or partial replacement of farinaceous material or salt quota. The following aromatic seeds and herbs constitute the proper ingredients for curry powder, and one or more than one, or all of these may be used at the discretion of the manufacturer in the preparation of the curry powder.

Black-pepper, cinnamon, cloves, coriander, cardamom chillies, cumin seeds, fenugreek, garlic, ginger, mustard, poppy seeds, turmeric, mace, nutmeg, curry leaves, white pepper, saffron and aniseed."

EGGS

Agmark (Govt. of India): *Grade designations and definition of quality of eggs (hen and duck) produced in India.*

Grade designation	Label	DEFINITION OF QUALITY			
		Hen eggs		Duck eggs	
		Oz. Minimum weight *	State or Condition	Oz. Minimum weight *	State or Condition
Special	White	2	The eggs must not have been preserved by any process and must be free from taint; the shell must be clean, free from stain, sound, of normal texture and shape.	2½	The eggs must not have been preserved by any process, the shell must be clean, free from stain and sound, the yolk central, visible but not dense, and freely mobile.
A	Red	1¾	The contents must be free from blemish, the yolk central and translucent or faintly	2	The white must be translucent, firm and not watery.
B	Blue	1½	but not clearly outlined and freely mobile; the white must be translucent and	1¾	
C	Yellow		clear, and the air space must not exceed three-eighths of an inch in depth.	1½	

* To allow for accidental errors in grading, a tolerance of 1 drachm in the weight of any egg may be permitted.

EDIBLE OILS or FATS

Bombay: "Edible Oil" means almond oil, groundnut oil, cocoanut oil, mustard oil, cotton seed oil, linseed oil, niger seed oil, olive oil, poppy seed oil, rape oil, soyabean oil, safflower oil, sesame oil, sunflower oil in the pure state, either liquid or solid.

"Edible fat" means lard, beef fat, mutton fat, goat fat and buffalo fat in their pure state.

Madhya Bharat (Indore): Edible oil, shall include ground nut oil, sesame oil or *til* oil, cocoanut oil and poppy seed oil in their pure state.

Rajasthan (Marwar): "Edible vegetable oil" means any oil used for human food and includes (1) cocoanut oil, (2) groundnut oil, (3) cotton seed oil, (4) *til* oil and (5) *sarson* oil.

Travancore - Cochin (Travancore): "Edible Vegetable Oil" means almond oil, cocoanut oil, sesame oil (*gingelly oil*), groundnut oil, mustard oil, olive oil, or such other vegetable oil as may be used for edible purposes, in the pure state.

Uttar Pradesh: "Edible Oil" means sesame (*til*) oil, olive oil, cocoanut oil, groundnut oil, mustard oil and rapeseed oil in their pure state and includes—

(i) imported salad oil in a container duly labelled as such,

(ii) any vegetable oil prepared by any hardening process, such as hydrogenation, provided that the container bears a label as may be prescribed stating the name of the oil, and

(iii) such other oils as the State Government may, by notification in the official *Gazette*, declare to be edible oil, but does not include admixture of two or more such oils.

N. B.— The **Central Committee for Food Standards,** Government of India, at its sixth and seventh meetings held in New Delhi in August 1951 and January 1953 respectively decided that the following oils be declared as edible oils: cotton seed oil, groundnut oil, cocoanut oil, mustard oil, palm kernel oil, sesame or *til* oil, olive oil, *mahua* oil, niger seed oil, safflower seed oil, tobacco seed oil, poppy seed oil and linseed oil.

CHEMICAL STANDARDS FOR EDIBLE ANIMAL FATS

	Madhya Pradesh			Uttar Pradesh		
	B.R. Reading at 40°C	Saponification value	Iodine value	B.R. Reading at 40°C	Saponification value	Iodine value
Beef Fat	47–49	193–200	35–46	44–49	193–200	35–46
Goat Fat	47–53	193–196	36–45	46·5–49	193–195	36–45
Mutton Fat	47–53	192–195	35–46	46·5–49	192–195	35–46
Pig Fat	49–52	192–198	52–65	49–52·5	192–198	52–65

Standards for these animal fats have not been prescribed by other Authorities.

COCOANUT OIL

Madhya Pradesh: "Cocoanut oil" means the oil obtained by a process of expression (not extraction) from the nut kernel of *Cocos nucifera.*

Orissa: "Cocoanut oil" means oil extracted or pressed out of country *ghana* or other mechanical means from the kernel of cocoanut.

Uttar Pradesh: The oil is obtained by a process of expression (not extraction) from the nut kernel of *Cocos nucifera*, free from admixture of any other substance.

Agmark (Govt. of India): Refined cocoanut oil shall be the genuine refined product obtained by expression from the kernel of the cocoanut, *i.e.*, copra and shall be free from admixture with other oils or fats. It shall be clear and free from sediment and suspended matter.

Cocoanut oil of *Grade* I or *Grade* II shall be the genuine product obtained by expression from the kernel of the cocoanut, *i.e.*, copra and shall be free from admixture with other oils or fats. It shall be clear and free from sediment and suspended matter. It shall have a sweet taste and characteristic odour of cocoanut oil.

Cocoanut oil of *Commercial A* or *Commercial B* grades shall be the genuine product obtained by expression or extraction from the kernel of the cocoanut, *i.e.*, copra and shall be free from admixture with other oils or fats. It shall also be reasonably free from sediment and suspended matter.

N.B.— The **Food Adulteration Committee (1937)**, Government of India, recommended that cocoanut oil should be defined as the oil obtained by a process of expression (not extraction) from the nut kernel of *Cocos nucifera*, and free from admixture with other oils or any other substances.

CHEMICAL STANDARDS FOR COCOANUT OIL *

Sl. No.	Authority	B. R. Reading at 40°C.	Sp. Gr. at 40°/30°C.	Saponification Value.	Unsaponifiable matter %	Iodine Value.	Acid value Oleic acid. %	Colour Lovibond Tintometer Scale.
1	Assam	—	—	—	—	—	—	—
2	Bengal	—	—	250–260	—	8–9	—	—
3	Bihar	—	—	—	—	—	—	—
4	Bombay	—	—	—	—	—	—	—
5	Coorg	—	—	—	—	—	—	—
6	Hyderabad	—	—	—	—	—	—	—
7	Madhya Bharat (Indore)	33·5–35·5	—	250–260	—	8–9	—	—
8	Madhya Pradesh	33·5–35·5	—	250–260	—	8–9	—	—
9	Madras	—	—	—	—	—	—	—
10	Mysore	—	—	—	—	—	—	—
11	Orissa	—	—	255–260	—	8–9	—	—
12	PEPSU	—	—	—	—	—	—	—
13	Punjab	—	—	—	—	—	—	—
14	Rajasthan.—							
	Jaipur	—	—	—	—	—	—	—
	Marwar	—	—	—	—	—	—	—
15	Travancore-Cochin { Cochin	—	—	—	—	—	—	—
	Travancore	—	—	—	—	—	—	—
16	Uttar Pradesh	33·5–35·5	—	250–260	—	8–9	—	—
17	(Govt. of India) AGMARK	Refractive Index at 40°C.		Not less than	Not more than		Not more than	Not deeper than 1 Y and 0·2 R in 1" cell.
	(i) Refined White Label	1·4480–1·4492	0·909–0·913	250	0·5	7·5–9·5	0·5	
	(ii) Grade I Red Label	1·4480–1·4492	0·909–0·913	250	0·5	7·5–9·5	2·0	Not deeper than a combination of 1·5 Y and 0·5 R in 1" Cell.
	(iii) Grade II Blue Label	1·4480–1·4492	0·909–0·913	250	0·8	7·5–9·5	4·0	Not deeper than a combination of 5 Y and 1·2 R in 1" Cell.
	(iv) Commerical A–Yellow-Label.	1·4480–1·4492	0·909–0·913	250	0·8	7·5–9·5	6·0	—
	(v) Commercial B–Green-Label.	1·4480–1·4492	0·909–0·913	250	0·8	7·5–9·5	10·0	—

* The **Food Adulteration Committee (1937)**, Government of India, recommended the following standards for cocoanut oil : B. R. Reading at 40°C, 33·5–35·5 ; saponification value, 250-260 ; iodine value, 8-9.

COTTON SEED OIL

Madhya Pradesh : "Cotton seed oil" means the oil obtained by a process of expression (not extraction) from the seeds of the cultivated species of *Gossypium.*

Uttar Pradesh : The oil is obtained by a process of expression (not extraction) from the seed of the cultivated species of *Gossypium*, free from admixture with any other substance.

N.B.— The **Food Adulteration Committee (1937)**, Government of India, recommended that cotton seed oil should be defined as the oil obtained by a process of expression (not extraction) from the seeds of the cultivated species of *Gossypium* and free from admixture with other oils or any other substances.

CHEMICAL STANDARDS FOR COTTON SEED OIL *

Sl. No.	Authority	B. R. Reading at 40°C.	Saponification Value	Iodine Value
1	Madhya Pradesh	58–59	190–195	110–116
2	Uttar Pradesh	58–59	190–195	110–116

The **Food Adulteration Committee (1937)**, Government of India, recommended the following standards for cottonseed oil: B. R. Reading at 40°C, 58-59; saponification value, 190–195; iodine value, 110–116.

GROUNDNUT OIL

Madhya Pradesh : "Groundnut oil" means the oil obtained by a process of expression (not extraction) from the groundnut (*Arachis hypogoea*).

Orissa : "Groundnut oil" means oil extracted or pressed out by country *ghana* or other mechanical means from groundnuts.

Uttar Pradesh : The oil is obtained by a process of expression (not extraction) from the groundnut (*Arachis hypogoea*) free from admixture with any other substance.

Agmark (Govt. of India) : Groundnut oil (edible) shall be the oil obtained by a process of expression (not extraction) from groundnuts, free from admixture with other oils or any other substances.

Groundnut oil (edible) shall be clear ‡, free from sediment and other insoluble matter.

Groundnut oil of *Special* (*Refined*) grade shall be refined by a process of clarification (by treatment with alkali and filtering through charcoal or Fuller's earth and deodorising with steam). No chemical bleaching agents shall be used.

Special and *Grade A* groundnut oils may or may not be refined as for *Special* (*Refined*).

* Standards have not been prescribed by other States for this commodity.

‡ A sample shall be considered clear if it does not show any turbidity by keeping at 20°C. for 24 hours.

CHEMICAL STANDARDS FOR GROUNDNUT OIL *

Sl. No.	Authority	B R. Reading at 40°C.	Sp. Gr. at 15·5°/15.5°C.	Saponification Value	Unsaponifiable matter not more than %	Iodine Value	Acid value not more than %	Colour Lovibond Tintometer. scale, through 1" cell
1	Assam	—	—	—	—	—	—	—
2	Bengal	—	—	—	—	—	—	—
3	Bihar	—	—	—	—	—	—	—
4	Bombay	—	—	—	—	—	—	—
5	Coorg	—	—	—	—	—	—	—
6	Hyderabad	—	—	—	—	—	—	—
7	Madhya Bharat (Indore) (*a*)	55–59	—	189–195	—	92–101	—	—
8	Madhya Pradesh	55–57·5	—	188–196	—	85–99	—	—
9	Madras	—	—	—	—	—	—	—
10	Mysore	—	—	—	—	—	—	—
11	Orissa	—	—	189–196	—	88–101	—	—
12	PEPSU	—	—	—	—	—	—	—
13	Punjab	—	—	—	—	—	—	—
14	Rajasthan { Jaipur	—	—	—	—	—	—	—
	{ Marwar	—	—	—	—	—	—	—
15	Travancore-Cochin { Cochin	—	—	—	—	—	—	—
	{ Travancore	—	—	—	—	—	—	—
16	Uttar Pradesh	55–57	—	188–196	—	85–99	—	—
17	(Govt. of India) AGMARK	Refractive index at 40°C.						
	Special (Refined)–Purple Label	1·4626–1·4643	0·916–0·919	188–196	0·080	85–99	0·5	Not deeper than equivalent to 5 yellow units.
	Special–Red Label	1·4626–1·4643	0·916–0·919	188–196	0·80	85–99	2·0	Not deeper than equivalent to a combination of 1 red & 10 yellow units.
	Grade A–Blue Label	1·4626–1·4639	0·920–0·916	188–196	1·0	85–99	3·0	Not deeper than equivalent to a combination of 1 red & 25 yellow units.

* The **Food Adulteration Committee (1937)**, Government of India, recommended the following standards for groundnut oil: B. R. Reading at 40°C, 55–57; saponification value, 186–196; and iodine value, 85–99.

(*a*) V. R. Index at 25°C. shall be 61·2–64·3.

LINSEED OIL

Bihar. Linseed oil is the fixed oil expressed exclusively from the ripe seeds of *Linum usitatissimum.*

Madhya Pradesh : "Linseed oil" means the oil obtained by a process of expression (not extraction) from the seeds of *Linum usitatissimum*.

Orissa : "Linseed oil" means oil extracted or pressed out by country *ghana* or other mechanical means from linseed,

Uttar Pradesh : Linseed oil is obtained by a process of expression (not extraction) from the seeds of *Linum usitatissimum*, free from admixture of any other substance,

N.B.— The **Food Adulteration Committee (1937)**, Government of India, recommended that linseed oil should be defined as the oil obtained by a process of expression (not extraction) from the seeds of *Linum usitatissimum*, and free from admixture with other oils or any other substances.

CHEMICAL STANDARDS FOR LINSEED OIL *

Sl. No.	Authority	B. R. Reading at 40°C.	Saponification Value	Iodine Value
1	Assam	—	—	—
2	Bengal	—	—	—
3	Bihar	70·5–73·5	187–195	170–2`0
4	Bombay	—	—	—
5	Coorg	—	—	—
6	Hyderabad	—	—	—
7	Madhya Bharat (Indore)	—	—	—
8	Madhya Pradesh	71·5–79	189–195	170–200
9	Madras	—	—	—
10	Mysore	—	—	—
11	Orissa	—	189–194	179–210
12	PEPSU	—	—	—
13	Punjab	—	—	—
14	Rajasthan { Jaipur	—	—	—
	Marwar	—	—	—
15	Travancore-Cochin { Cochin	—	—	—
	Travancore	—	—	—
16	Uttar Pradesh	71·5–79	189–195	170–200

* The **Food Adulteration Committee (1937)**, Government of India, recommended the following standards for linseed oil: B.R. Reading at 40°C, 71.5–79; saponification value, 189–195; iodine value, 170–200.

MUSTARD OIL

Assam: Mustard oil shall be derived exclusively from mustard or rape seed, and shall conform to such standard of purity as may be prescribed by the provincial Government in this behalf.

Bihar: Mustard oil is the oil exclusively derived from mustard seeds.

Madhya Pradesh: "Mustard oil" means the oil obtained from the wild seeds of a group of species of mustard oil plants.

Orissa: "Mustard oil" means oil extracted or pressed out by country *ghana* or other mechanical means from mustard seed.

PEPSU: "Mustard oil" shall be the oil extracted exclusively from the seeds of *Brassica juncea* (*Rai*).

Punjab: "Mustard oil" shall be the oil extracted exclusively from the seeds of *Brassica juncea* (*Rai*).

Rajasthan (Jaipur): "Mustard oil" shall be the oil extracted exclusively from the seeds of *Brassica juncea* (*Rai*).

Uttar Pradesh: Mustard oil is the fixed oil expressed or extracted from mustard seed and shall not contain any toxic substance.

Agmark (Govt. of India): Mustard oil (edible) shall be the fixed oil obtained by a process of expression (not extraction) of Mustard (*Sarson*) seed (*Brassica campestris*), or of commercial mixtures of mustard seed with other oil-seed such as *rape*, *toria*, *laki*, *rai* or *laha* belonging to *juncea*, *Napus* and *rapa* varieties of *Brassica*. Mustard oil shall be free from added flavouring and colouring substances* or admixture with any mineral, essential or extracted oil or other fixed oils.

Mustard oil (edible) shall be clear‡, free from sediment and other insoluble matter.

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* A positive test for hydrocyanic acid shall be taken as indicating addition of synthetic mustard oil.

‡ A sample shall be considered clear if it does not show any turbidity after keeping at 20°C. for 24 hours.

CHEMICAL STANDARDS FOR MUSTARD OIL*

Sl. No.	Authority	B. R. Reading at 40°C.	Saponification Value	Iodine Value	Acid value as oleic acid not more than %	Unsaponifiable matter not more than %	Sp. Gr. at 30°/30°C	Natural essential oil %
1	Assam	58–60	169–176	96–104	6·0	—	—	—
2	Bengal	—	169–175	96–104	—	—	—	—
3	Bihar	—	160–176	96–108	—	—	—	—
4	Bombay	—	—	—	—	—	—	—
5	Coorg	—	—	—	—	—	—	—
6	Hyderabad	—	—	—	—	—	—	—
7	Madhya Bharat (Indore)	—	—	—	—	—	—	—
8	Madhya Pradesh	58-60	169–176	96-106	—	—	—	—
9	Madras	—	—	—	—	—	—	—
10	Mysore	—	—	—	—	—	—	—
11	Orissa	—	169–176	96–108	—	—	—	—
12	PEPSU	—	169–175	96–104	—	—	—	—
13	Punjab	—	169–175	96–104	—	—	—	—
14	Rajasthan — Jaipur	—	188–193	103–115	—	—	—	—
	Rajasthan — Marwar	—	—	—	—	—	—	—
15	Travancore-Cochin — Cochin	—	—	—	—	—	—	—
	Travancore-Cochin — Travancore	—	—	—	—	—	—	—
16	Uttar Pradesh	58–60	169–176	96–106	—	—	—	—
17	Govt. of India AGMARK	Refractive index at 40°C						
	Special–Red Label	1·4646–1·4666	170–175	99–106	2	1	0·905–0·908	0·5–0·75
	Grade A–Blue Label	1·4643–1·4669	170–176	98–106	4	1·5	0·905–0·909	(not less than 0·4)

* The **Food Adulteration Committee (1937)**, Government of India, recommended the following standards for mustard oil: B. R. Reading at 40°C, 58–60; saponification value, 169–176; iodine value, 96–106.

SAFFLOWER OIL

Madhya Pradesh: "Safflower oil" means the oil obtained by a process of expression (not extraction) from the seeds of *Carthamus tinctorius*.

Uttar Pradesh: Safflower oil is obtained by a process of expression (not extraction) from the seeds of *Carthamus tinctorius*, free from admixture with any other substance.

N.B.— The **Food Adulteration Committee (1937)**, Government of India, recommended that safflower oil should be defined as the oil obtained by a process of expression (not extraction) from the seeds of *Carthamus tinctorius*, and free from admixture with other oils or any other substances.

CHEMICAL STANDARDS FOR SAFFLOWER OIL*

Sl. No.	Authority	B. R. Reading at 40°C	Saponification Value	Iodine Value
1	Madhya Pradesh	62·4-64·7	185·5–186	135·2–135·6
2	Uttar Pradesh	62·4–64·7	185·5–186	135·2–135·6

* The **Food Adulteration Committee (1937)**, Government of India, recommended the following standards for safflower oil: B. R. Reading at 40°C, 62·4-64·7; saponification value, 185·5–186·0; iodine value, 135·2–135·6.

Standards have not been prescribed by other States for this commodity.

SARSON OIL

PEPSU: *Sarson* oil shall be the dark brown viscous oil obtained exclusively from the seeds of *Brassica rapa*.

Punjab: The same as above.

Rajasthan (Jaipur): *Sarson* oil shall be the dark brown viscous oil obtained exclusively from the seeds of *Eruca sativa*.

CHEMICAL STANDARDS FOR *SARSON* OIL

Sl. No.	Authority		B. R. Reading at 40°C.	Saponification Value	Iodine Value
1	PEPSU		—	170–180	93–105
2	Punjab		—	170–180	93–105
3	Rajasthan	Jaipur	—	170–180	93–105
		Marwar	—	170–180	93–105

Standards have not been prescribed by other States for this commodity.

SESAME OIL

Madhya Pradesh: "*Til* or *gingelly* or sesame oil" means the oil obtained by a process of expression (not extraction) from *til* or gingelly (*Sesamum Indicum*) seed (black, brown, white or mixed).

Orissa: '*Gingili* oil' (or *Til* oil) means oil extracted or pressed out by country *ghana* or other mechanical means from *gingili* seeds (*Til* seeds).

PEPSU : '*Til* oil' shall be the pale yellow liquid obtained exclusively from the seeds of *Sesamum Indicum.*

Punjab : The same as above.

Rajasthan (Jaipur): The same as above.

Uttar Pradesh : *Til* oil is obtained by a process of expression (not extraction) from *til* or *gingelly* (*Sesamum Indicum*) seed (black, brown, white or mixed), free from admixture with any other substance.

Agmark (Govt. of India) : *Til* or *gingelly* (sesame) oil (edible) shall be the oil obtained by a process of expression (not extraction) from *til* or *gingelly* (sesame) seed (black, brown, white or mixed) and shall be free from admixture with other oils or any other substances.

Til or *gingelly* (sesame) oil (edible) shall be clear *, free from sediment and other insoluble matter.

Special and Grade A oil may be refined but no chemical bleaching agents shall be used.

N.B.— The **Food Adulteration Committee (1937),** Government of India, recommended that *til, gingelly* or sesame oil should be defined as the oil obtained by a process of expression (not extraction) from *til* or *gingelly (Sesamum Indicum)* seed (black, brown, white or mixed) and shall be free from admixture with other oils or any other substances.

* A sample shall be considered clear if it does not show any turbidity by keeping at 20°C for 24 hours.

CHEMICAL STANDARDS FOR SESAME (*TIL* or *GINGELLY*) OIL *

Sl. No.	Authority	B. R. Reading at 40°C.	Sp. Gr. at 15.5°/ 15.5°C.	Saponification Value	Unsaponifiable matter not more than %	Iodine Value	Acid value not more than %	Colour Lovibond Tintometer. Units through 1" cell
1	Assam	—	—	—	—	—	—	—
2	Bengal	—	—	—	—	—	—	—
3	Bihar	—	—	—	—	—	—	—
4	Bombay	—	—	—	—	—	—	—
5	Coorg	—	—	—	—	—	—	—
6	Hyderabad	—	—	—	—	—	—	—
7	Madhya Bharat (Indore) (*a*)	58–61	—	188–193	—	104–115	—	—
8	Madhya Pradesh	58–61	—	188–193	—	105–114	—	—
9	Madras	—	—	—	—	—	—	—
10	Mysore	—	—	—	—	—	—	—
11	Orissa	—	—	188–193	—	103–114	—	—
12	PEPSU	—	—	188–193	—	103–112	—	—
13	Punjab	—	—	188–193	—	103–112	—	—
14	Rajasthan — Jaipur	—	—	188–193	—	103–115	—	—
	Rajasthan — Marwar	—	—	—	—	—	—	—
15	Travancore - Cochin	—	—	—	—	—	—	—
16	Uttar Pradesh	58–61	—	188–193	—	105–114	—	—
17	(Govt. of India) AGMARK	Refractive index at 40°C.						
	Special–Red Label	1·4646–1·4666	0·921–0·924	188–193	1·8	105–114	3·0	Not deeper than equivalent to the combination of 1·5 red and 20 yellow units.
	Grade A–Blue Label	1·4640–1·4666	0·921–0·924	188–193	1·5	105–114	4·0	Not deeper than equivalent to the combination of 2·5 red and 30 yellow units.

* The **Food Adulteration Committee (1937)**, Government of India, recommended the following standards for sesame, *til* or *gingelly* oil: B. R. Reading at 40°C 58–61; saponification value, 188–193; and iodine value, 105–114.

(*a*) V. R. Index at 25°C shall be 66·5.

OTHER OILS – *MAHUA*, OLIVE, POPPY SEED, *TARAMIRA* AND *TORIA* OILS

Definitions of and standards for *mahua*, olive, poppy seed, *taramira* and *toria* oils have been given only by one or two States as shown below. Other States do not appear to have specified any standards for these oils.

Authority	Definition	B. R. Reading at 40°C	Saponification Value	Iodine Value.
	***MAHUA* OIL**			
Uttar Pradesh ..	The oil is obtained by a process of expression (not extraction) from the *Bassia* species including *Bassia latifolia*, free from admixture with any other substance.	44—48	190—195	40—42
	OLIVE OIL *			
Madhya Pradesh ..	"Olive oil" means the oil obtained by a process of expression (not extraction) from the ripe fruit, *Olea Europoea*.	53—56	185—196	79—90
Uttar Pradesh ..	The oil is obtained by a process of expression (not extraction) from the ripe fruit, *Olea Europoea* and free from admixture with any other substance.	53—66	185—196	79—90
	POPPY SEED OIL ‡			
Madhya Bharat (Indore) ..		68·2—72	186—194	138—145
Madhya Pradesh ..	"Poppy seed oil" means the oil obtained by a process of expression (not extraction) from the poppy seed (*Papaver somniferum.*)	60—64	186—194	133—143
Uttar Pradesh ..	The oil is obtained by a process of expression (not extraction) from the poppy seed (*Papaver somniferum*) and free from admixture with any other substance.	60—64	186—194	133—143
	***TARAMIRA* OIL**			
PEPSU ..	*Taramira* oil shall be the dark brown viscous oil obtained exclusively from the seeds of *Eruca sativa*.	—	170—180	93—105

* The **Food Adulteration Committee (1937),** Government of India recommended that olive oil should be defined as the oil obtained by a process of expression (not extraction) from the ripe fruit, *Olea Europoea*, and free from admixture with other oils or any other substances. The Committee also recommended the following standards for olive oil: B. R. Reading at 40°C, 53–56; saponification value, 185–196; iodine value. 79–90.

‡ The **Food Adulteration Committee (1937),** Government of India, recommended that poppy seed oil should be defined as the oil obtained by a process of expression (not extraction) from the poppy seed (*Papaver somniferum*) and free from admixture with other oils or any other substances. The committee also recommended the following standards for poppy seed oil: B. R Reading at 41°C, 60–64; saponification value, 186–194; iodine value 133–143.

Authority	Definition	B. R. Reading at 40°C	Saponification Value	Iodine Value.
Punjab ..	*Taramira* oil shall be the dark brown viscous oil obtained exclusively from the seeds of *Eruca sativa*.	—	170—180	93—105
	TORIA OIL			
PEPSU ..	*Toria* oil shall be the dark brown viscous oil obtained exclusively from the seeds of *Brassica napus*.	—	170—180	93—105
Punjab ..	*Toria* oil shall be the dark brown viscous oil obtained from the seeds of *Brassica napus*.	—	170—180	93—105

REMARKS

Only a few States have defined the edible oils and laid down standards for them. The Central Committee for Food Standards, in 1951, prepared a list of 12 edible oils. In 1953, linseed oil was also added. Other oils which are not included in the list but which are considered edible in certain States are: almond oil, soyabean oil, sunflower oil, and *taramira* (*Eruca sativa*) oil. According to the Madhya Pradesh and Uttar Pradesh Pure Food Rules and also the Agmark Rules, edible oils must be obtained only by a process of *expression* and not by *extraction*. However, extraction of mustard oil is permissible in the Madhya Pradesh and Uttar Pradesh and of Commercial A and B grades of cocoanut oil according to Agmark Rules.

The Pure Food Laws of PEPSU, Punjab and Rajasthan (Jaipur) have described mustard oil as the oil extracted from the seeds of *Brassica juncia* (*Rai*). The Agmark Rules describe mustard oil as an oil obtained from mustard (*Sarson*) seed (*Brassica campestris*), or commercial mixtures of mustard seed with other oil seeds belonging to *juncia*, *rapa* and *Napus* species of *Brassica*. It may be added that the oil from *Brassica rapa* is known as *sarson* oil in PEPSU and Punjab and that from *Eruca sativa* is known by the same name in Rajasthan (Jaipur). The oil from *Eruca sativa* is known as *taramira* oil in PEPSU and Punjab.

"Edible fat" meaning, fat derived from animal sources, has been defined by only one State *viz.* Bombay.

MARGARINE

Bombay: "Margarine" means any article of food which resembles butter, but which does not contain more than 10 per cent of milk fat, the rest being animal fat or "Vegetable product", or both.

FOODGRAINS

Punjab: The grain shall be of the specified crop and shall be in sound and merchantable condition, sweet, clean, wholesome and free from admixture of any deleterious substance, and from smut, sticks, stalks, tiles, stones, weevils, and damaged or discoloured grains. The percentage of admixture or impurity of any sort shall not exceed the proportions, if any, laid down as the rejection basis in the schedule of specifications relative to the contract.

Uttar Pradesh: Foodgrains for human consumption shall be clean, dry and free from mould, insect damage, bad smell, discolouration and admixture with deleterious and toxic material and in respect of these criteria shall fulfil the following requirements:

(a) *Colour*:— The grain, as far as possible, shall have its normal colour but mere discolouration shall not make it unfit if repellent smell or taste have not developed.

(b) *Smell* :— Persistent bad smell in foodgrains shall be indicative of unhealthy deterioration of grain and it shall be considered to be injurious to health.

(c) *Taste* :— Bitter taste in foodgrains shall be deemed to render it injurious to health.

(d) *Foreign matter*:— Which includes sand, gravel, dirt stones, pebbles, straw, stems, chaff, cockles, oil-seeds and other non-poisonous seeds, but excludes other foodgrains, shall not exceed 4 per cent by weight.

(e) *Foreign foodgrains* :— Grain, other than the one which is being sold, would be deemed to be foreign foodgrain so far as that particular grain is concerned and shall not exceed 10 per cent except in the case of rice where it (including paddy) shall not exceed 3 per cent.

(f) *Damaged grains* :—Grains which are damaged, touched, mouldy or "shrivelled" shall not exceed a total of 10 per cent of which mouldy grain, after superficial cleaning, shall not be more than 1·5 per cent.

(g) *Insect-damaged grain* :—Shall not exceed the limit of 6 per cent.

(h) *Moisture content* :—The moisture content at any time irrespective of climate or season, shall not exceed 12 per cent for wheat and 15 per cent for rice, maize, *bajra*, *jowar*, *ragi* and gram.

(i) *Sound grains*:—Notwithstanding the permissible limits stated in clauses (*d*) to (*h*) above, the percentage of normal and sound grains shall in no case be lower than 80 per cent of the total foodgrains, inclusive of the percentage under clause (*e*).

Fair Average Quality Standards (Govt. of India): All grains purchased shall be of fair average quality, in sound merchantable condition, sweet, dry, clean, wholesome, of good food value, and free from mould, weevils, smell, discolouration, admixture of deleterious substances, excessive moisture and all impurities except to the extent indicated in the statement of weights and refractions for different grains.

Dirt:—Any foreign matter of the nature of dust, stones, lumps of earth, mud, chaff, stem or straw, oil seeds, cockles, non-edible grains and other foreign matter which is not covered by any other item of refraction.

Moisture:—Foodgrains contain a certain amount of natural moisture. It varies in each kind of foodgrain and from place to place and season to season and also according to the method of determination adopted.

Grain should, however, be sound, dry and in merchantable condition so that it may keep well in storage without undergoing deterioration on account of excessive moisture.

Damaged Grain:—Grain that is internally discoloured and spoiled by natural or unnatural factors, such as, loose water, excessive moisture, fungi, insects and pests etc.

Touched or slightly damaged:—Grain superficially damaged or discoloured, whose tip or skin is affected, leaving the interior practically sound and fit for consumption.

Shrivelled:—Immature, blighted or withered grains, generally with wrinkled surface.

Smutty Grain:—Smut is a fungoid disease. The affected grain develops sooty *mycelium* within the kernel, and has dark black patches on the surface and, in some cases, stinks like rotten fish.

Discoloured:—Deviation in the colour of the grain from normal, generally caused by light shower of rain when the grain is on the threshing floor, and also during storage by excessive moisture or exposure to sun. Immature crop may also be responsible for discolouration of the grain.

Weevilled:—Grain partially or wholly bored or eaten by weevil or other grain insects.

Other foodgrains:—Edible grains other than the principal grain, are called 'other foodgrains.' An admixture of gram or barley with wheat is an example of other foodgrains in wheat.

Red wheat:—Wheat grain having distinctly dark reddish colour.

Unripe:—Grain which could not reach maturity, *i. e.*, harvested at about the milky stage. It is generally greenish in colour and is under-developed.

Paddy:—Rice from which husk is not removed or hulled out.

Red Rice:—Rice kernel having a thin membraneous red coat. Rice kernel should be classed as red if 25% or more of its entire surface, in the aggregate, is coated with a red cuticle.

Full or head grain:—Complete and unbroken kernels of rice.

Whole grain:—Rice kernels of $\frac{3}{4}$th of their size or over.

Brokens:—Kernels which are less than $\frac{3}{4}$th but not less than $\frac{1}{4}$th of the whole.

Fragments:—Kernels which are less than $\frac{1}{4}$th of the full grain.

Chalky:— Rice is of a milk-white or chalky colour and opaque. It is relatively soft, coarse in appearance and tends to cook into a glutinous mass.

Black Gram, Red Gram, White Gram:—These are termed on the colour specifications of gram.

Army Service Corps (Govt. of India): *Dirt*:—Stones, lumps of earth, mud, dust, chaff, stems or straw, oil seeds, cockles, non-edible grains and any other extraneous matter.

Foreign Foodgrains:—Foodgrains or pulses other than the one to which the specification relates or those for which special provision has been made in the specification.

Mouldy and Discoloured grains:—Grains attacked by fungus of any type or grains the original colour of which has changed on account of their getting wet, but excluding insect-damaged grains.

Insect-Damaged grains:—Grains which show signs of being attacked by insects. Grains showing eggs should be taken as grains attacked by insects.

Touched Grains:—Grains showing superficial damage involving only a part of the grain which may be due to insect, fungus or wetting but excluding mechanically damaged grains.

Unripe Grains:—Immature grains with green endosperms.

Whole Grains:—Grains which have not been broken during the process of conversion into *dals*.

Shrivelled Grains:—Immature or withered grains, generally with wrinkled surface.

Unhusked Split Grains:—Split grain from which the husk has not been removed either wholly or partially.

Broken Grains:—Grains which are not whole but so broken that the pieces are less than one-half of the split grain.

Chunni:—Grain fragments which are so much broken that the pieces are less than one-fourth of the split grain.

N. B.—The **Central Committee for Food Standards,** Government of India, at its 4th meeting held in Bombay in May 1947, agreed that grains offered for human consumption should be sweet, clean, dry and free from mould, insect damage, bad smell, discolouration and admixture with deleterious and toxic material and in respect of these criteria should fulfil the following requirements:

(a) *Colour.*—The grain as far as possible should have its normal colour but mere discolouration should not make it unfit if repellent smell or taste has not developed,

(b) *Smell.*—Persistent bad smell not removable by sunning and airing is indicative of unhealthy deterioration of grain and its presence therefore would make the grain unfit for human consumption.

(c) *Taste.*—Development of bad taste, *e.g.*, bitterness in old *bajra*, will make the foodgrain unfit for human consumption. In case of doubt the grain should invariably be subjected to consumers' trial after cooking.

(d) *Foreign Matter.*—Which includes sand, gravel, dirt, stones, pebbles, straw stems, chaff, cockles, oil seeds and other non-poisonous seeds, but excludes other foodgrains, should not exceed 4% by weight.

(e) *Foreign Foodgrains.*—Should not exceed a limit of 10% in the case of any foodgrain except rice where the limit (including paddy) should not exceed 3%. In the case of *jowar* the presence of grains of different shades of colour should not be regarded as an admixture with foreign grains.

(f) *Damaged Grains.*—Including damaged, touched, mouldy and "shrivelled" grains should not exceed a total of 10% of which mouldy grain, after superficial cleaning, should not be more than 1·5%.

(g) *Insect Damage.*—Should not exceed the limit of 6%.

(h) *Moisture Content.*—At any time, irrespective of climate or season, should not exceed 12% for wheat and 15% for rice, maize, *bajra*, *jowar*, *ragi* and gram.

(i) *Sound Grains.*—Notwithstanding the permissible limits stated under (*d*) to (*h*) above, the percentage of normal and sound grains must in no case be lower than 80% of the total foodgrains, inclusive of the percentage under item (*e*).

As regards moulds, it was accepted that surface infestation with moulds of foodgrains which is so common especially in the case of *jowar*, is harmless to human beings.

The *Committee*, at its sixth meeting held in New Delhi in August 1951, suggested that if any wheat consignment was found to contain *Lolium* seeds, the same should be cleaned of the poisonous seeds before it was sold to the consumers.

SPECIFICATIONS FOR *BAJRA*

Sl. No.	Admixture or Impurity	Government of India (F.A.Q Standards)		Government of Punjab		
		Tolerance %	Rate of recovery for excess impurities or admixture	Tolerance %	Rate of recovery for excess impurities or admixture	Rejection %
1	Dirt	2·0	Mutual. Over 2-3% at full value. Over 3% at full value + cleaning charges to buyers at Rs.. per 100 bags. Over 6% at double value + cleaning charges to buyers at Rs.. per 100 bags.	2·0	Over 2–6% at full value + cleaning charges to buyers at Rs.5/-per 100 bags. Over 6% at double value + cleaning charges to buyers at Rs.5/-per 100 bags.	—
2	Other food grains	Nil	At half value. Over 5% at full value.	Nil	Any excess at half value. Over 15% at full value.	
3	Slightly damaged	2·0	Over 2–4% at ¼ value. Over 4–6% at half value. Over 6% at full value.	—	—	
4	Damaged	1·0	Over 1–2% at half value. Over 2% at full value.	7·0	Over 7–14% at ¼ value. Over 14–20% at half value.	Over 20%
5	Discoloured	5·0	Over 5–10% at ⅛ value. Over 10-15% at ¼ value. Over 15% at half value.	7·0	,	,,
6	Shrivelled	1·0	Over 1–4% at half value. Over 4% at full value.	1·0	Over 1–4% at half value. Over 4% at full value.	
7	Red grains	—	—	2·0	Over 20–30% at 1/20 value. Over 30–40% at 1/10 value. Over 40–50% at ¼ value. Over 50% rejectable.	
8	Weevilled	—	—	1·0	Over 1-4% at half value. Over 4% at full value.	
	1st October to 31st December	Nil	Up to 0·25% at ¼ value. Over 0·25% at full value.	—	—	Over 2·0% (from new crop)
	1st January to 31st January	0·5	0·5–1·0% at ¼ value. Over 1·0% at full value.	—	—	,,
	1st February to end of February	1·0	Over 1–2% at ¼ value. Over 2% at full value.	—	—	,,
	1st March to 31st March	1·5	Over 1·5–2·5% at ¼ value. Over 2·5% at full value.	—	—	Over 3·0%

Specifications for *Bajra* (*Continued*)

Sl. No	Admixture or Impurity	Government of India (F.A.Q. Standards)		Government of Punjab		
		Tolerance %	Rate of recovery for excess impurities or admixture	Tolerance %	Rate of recovery for excess impurities or admixture	Rejection %
	1st April to 30th April	2·0	Over 2–3% at $\frac{1}{4}$ value. Over 3% at full value.	—	—	Over 5%
	1st May to 31st May	2·0	Over 2–4% at $\frac{1}{4}$ value. Over 4% at full value.	—	—	,,
	1st June to 30th June	2·5	2·5-4% at $\frac{1}{4}$ value. Over 4–5% at half value. Over 5% at full value.	—	—	,,
	1st July to end of season.	3·0	Over 3–4% at $\frac{1}{4}$ value. Over 4-6% at half value. Over 6% at full value.	—	—	,,

SPECIFICATIONS FOR BARLEY

The quality of barley has been defined by Government of India (A.S.C. Specifications) as below:

(1) The barley (**Hordeum vulgare**) shall consist of whole grains of fair average size and plumpness, thin skinned and free from beard (awns). The grains shall be hard with a slightly wrinkled skin of uniform pale golden yellow colour tinged with green, and free from discolouration.

(2) The barley shall be of the current season's crop and shall be sound, dry, sweet and wholesome. Barley damaged by insects, moulds, other infections, foreign grains and other impurities shall not exceed the proportions indicated in the table.

Sl. No.	Admixture or Impurity	Government of India			Government of Punjab	
		F.A.Q. Standards		A. S. C. Specifications		
		Tolerance %	Rate of recovery for excess impurities or admixture	Tolerance %	Tolerance %	Rate of recoveries for excess impurities or admixture
1	Dirt	2·0	Mutual. Over 2–5% at full value. Over 5% at full value *plus* cleaning charges to buyers at Rs. .. per 100 bags.	0·5 (*a*)	1·0	Over 1·5–2·5% at full value. Over 2·5% at full value *plus* cleaning charges to buyers at Rs. 5 per 100 bags.
2	Moisture	—	—	11·0	—	—
3	Other food-grains (Other than wheat)	2·0	Over 2% at half value. Over 6% at full value.	2·0 (*b*)	2·0	Over 2·5% at half value. Over 5% at full value.
4	Damaged	1·0	Over 1–2% at half value. Over 2% at full value.	1·5	1·0	Over 1–2% at half value. Over 2 % at full value.

Specifications for Barley (*Continued*)

Sl. No.	Admixture or Impurity	Government of India			Government of Punjab	
		F.A.Q. Standards		A. S. C. Specification		
		Tolerance %	Rate of recovery for excess impurities or admixture	Tolerance %	Tolerance %	Rate of recoveries for excess impurities or admixture
5	Touched (Slightly damaged)	3·0	Over 3–6% at ¼ value. Over 6–8% at half value. Over 8% at full value.	1·5	3·0	Over 3–6% at ¼ value. Over 6–8% at half value. Over 8% at full value.
6	Shrivelled	2·0	Over 2–10% at ¼ value. Over 10–15% at half value. Over 15% at full value.	3·0	3·0	3–10% at ¼ value. 10–15% at half value. Over 15% at full value.
7	Weevilled:— New crop to end of June	Nil	Up to 0·1% at ¼ value. Over 0·1% at full value.	0·5 (May–June)	Nil	Up to 0·1% at ¼ value. Over 0·1% at full value.
	1st–31st July	Nil	Up to 0·25% at ¼ value. Over 0·25–0·5% at half value. Over 0·5% at full value.		Nil	Up to 0·25% at ¼ value. Over 0·25–0·5% at half value. Over 0·5% at full value.
	1st–31st August	0·5	Over 0·5–1·0% at ¼ value. Over 1·0–1·5% at half value. Over 1·5% at full value.	1·5 (July–Sept.)	0·5	0·5–1·0% at ¼ value. 1·0–2·0% at half value. Over 2·0% at full value.
	1st–30th Sept.	1·0	Over 1–2% at ¼ value. Over 2–3% at half value. Over 3% at full value.		1·0	Over 1–2% at ¼ value. Over 2–3% at half value. Over 3·0% at full value.
	1st–31st October	1·25	Over 1·25–2·5% at ¼ value. Over 2·5–3% at half value. Over 3% at full value.	2·0 (Oct. to Nov.)	1·25	Over 1·25–2·0% at ¼ value. Over 2–3% at half value. Over 3% at full value.
	1st–30th Nov.	1·5	Over 1·5–4% at ¼ value. Over 4·5% at half value. Over 5% at full value.		2·0 (to end of crop)	Over 2–4% at ¼ value. Over 4–6% at half value. Over 6% at full value.
	1st December to end of crop	1·5	Over 1·5–4% at ¼ value. Over 4–6% at half value. Over 6% at full value.	2·5 (Dec. to April)	—	—

(*a*) Dirt includes non-foodgrains, seeds and all extraneous matter, other than foodgrains.

(*b*) Foreign foodgrains: Wheat in barley shall be accepted as barley up to 5% and any excess over this will be considered as foreign foodgrains. The percentage of black oats shall not exceed 2·0%.

SPECIFICATIONS FOR GRAM

The quality of grain has been defined by Government of India as follows: **F.A.Q. Standards.**—All grains purchased shall be in sound merchantable condition, sweet, dry, clean, wholesome, of good food value and free from mould, weevils, smell, discolouration, admixture of deleterious substances, excessive moisture and all impurities except to the extent indicated in the schedule below.

A.S.C.—The *Chana* whole (*Cicer arietinum*) shall consist of bold, hard peas with a shrivelled skin and of a dark yellow brown or blue colour. The kernel of the peas shall be bright yellow and have a fresh pea-smell and have no bitterness or unpleasant flavour. The *Chana* whole shall be of the current season's crop and shall be sound, dry, sweet, clean and wholesome. Grains damaged by insects, moulds, other infections, foreign grains and other impurities shall not exceed the proportion indicated below.

Sl. No.	Admixture or impurity	Government of India			Punjab Government			
		F. A. Q. Standards		A. S. C. specifications	For delivery into Provincial godowns		*Kabli* gram* for civil and defence requirements	
		Tolerance %	Rate of recovery for excess impurities or admixture	Tolerance %	Tolerance %	Rate of recovery for excess impurities or admixture	Tolerance %	Rate of recovery for excess impurities or admixture
1	Dirt	1·5	Mutual at full value. Over 1·5-3% at full value. Over 3–5% at full value + cleaning charges to buyers at Rs... per 100 bags. Over 5% at double value + cleaning charges to buyers at Rs... per 100 bags.	0·5	1·5	Mutual at full value. Over 1·5–3% at full value cleaning charges to buyers at Rs. 5 per 100 bags. Over 5% at double value + cleaning charges to buyers at Rs. 5 per 100 bags.	0·5	Over 0·5–1% at full value. Over 1·0–2·0% at full value + cleaning charges to buyers at Rs. 5 per 100 bags. Over 2·0% at double value + cleaning charges at Rs. 5 per 100 bags to buyers.
2	Moisture	—	—	11·0	—	—	—	—
3	Other food grains (*a*)	1·0	Excess at half value up to 10%. Over 10% at full value.	1·0	—	—	0·5	Over 0·5–2·0% at half value. Over 2·0% at full value.
	Wheat	—	—	—	0·5	Mutual at half valuc. Over 0·5% at half value.	—	—
	Food grains other than wheat	—	—	—	0·5	Over 0·5-5% at half value. Over 5·0% at full value.	—	—

* Specifications for civil and Defence requirements in regard to *Kabli* gram are the same.

(*a*) For Defence requirements, consignments containing over 2% admixture of gram including *Kabli* gram of size other than contracted shall be rejected.

Specifications for Gram (*Continued*)

S.I No.	Admixture or impurity	Government of India			Punjab Government			
		F. A. Q. Standards		A. S. C. specifications	For delivery into Provincial godowns		*Kabli* gram * for civil and defence requirements	
		Tolerance %	Rate of recovery for excess impurities or admixture	Tolerance %	Tolerance %	Rate of recovery for excess impurities or admixture	Tolerance %	Rate of recovery for excess impurities or admixture
	Other (*b*) varieties	—	—	—	—	—	2·0	Over 2·0–5·0% at half value. Over 5·0% at full value.
4	Damaged	1·0	Over 1–2% at half value. Over 2% at full value.	1·5	1·0	Over 1–2% at half value. Over 2% at full value.	1·0	Over 1·0–2·0% at half value. Over 2·0% at full value.
5	Touched (Slightly damaged)	2·0	Over 2–4% at ¼ value. Over 4–6% at half value. Over 6% at full value.	1·5	2·0	2–4% at ¼ value. Over 4–6% at half value. Over 6% at full value.	2·0	Over 2·0–4·0% at ¼ value. Over 4·0–6·0% at half value. Over 6% at full value.
6	Shrivelled and unripe	6·0	Over 6–10% at ¼ value. Over 10–15% half value. Over 15% at full value.	(*d*) 1·0	6·0	Over 6–10% at ¼ value. Over 10–15% at half value. Over 15% at full value.	5·0	Over 5·0–8·0% at ¼ value. Over 8·0–12% at half value. Over 12·0% at full value.
7	Weevilled (*c*) New crop to end of May	Nil	Up to 0·05% at ¼ value. Over 0·05% at full value.	0·5	—	—	Nil	Up to 0·05% at ¼ value. Over 0·05% at full value.
	1st–30th June	Nil	Up to 0·10% at ¼ value. Over 0·10% at full value.	,,	—	—	Nil	Up to 0·10% at ¼ value. Over 0·10% at full value.

* Specifications for civil and Defence requirements in regard to *Kabli* gram are the same.

(*b*) Other varieties of *Kabli* gram of the above specification for which tolerance basis is 2% shall also include *Kabli* gram of size other than contracted.

(*c*) Percentage of weevilled grains will be ascertained by counting and not by weight. Egg-spotted grains will be treated as weevilled grains.

(*d*) Grains showing tiny spots at which insect eggs have been inserted will be cut in half and if found to contain larvae will be included in insect-damaged grains.

Specifications for Gram (*Continued*)

Sl. No.	Admixture or Impurity	Government of India			Punjab Government			
		F. A. Q. Standards		A. S. C. specifications	For delivery into Provincial godowns		*Kabli* gram* for civil and defence requirements	
		Tolerance %	Rate of recovery for excess impurities or admixture	Tolerance %	Tolerance %	Rate of recovery for excess impurities or admixture	Tolerance %	Rate of recovery for excess impurities or admixture
	1st–31st July	Nil	Up to 0·25% at ¼ value. Over 0·25–0·5% at half value. Over 0·5% at full value.	1·5	—	—	Nil	Up to 0·25% at ¼ value. Over 0·25–0·5% at half value. Over 0·5% at full value.
	New crop to end of July	—	—	,,	Nil	Up to 0·5% at half value. Over 0·5% at full value.	—	—
	1st–31st August	0·5	Over 0·5–1·0% at ¼ value. Over 1–2% at half value. Over 2% at full value.	,,	1·0	Over 1–2% at ¼ value. Over 2–3% at half value. Over 3% at full value.	0·5	Over 0·5–1·0% at ¼ value. Over 1·0–2·0% at half value. Over 2·0% at full value.
	1st–30th Sept.	1·0	Over 1–2% at ¼ value. Over 2·2·5% at ½ value. Over 2·5% at full value.	,,	1·0	do	1·0	Over 1–2% at ¼ value. Over 2·0–2·5% at half value. Over 2·5% at full value.
	1st–31st October	1·25	Over 1·25–3·0% at ¼ value. Over 3–4% at half value. Over 4% at full value.	2·0	1·5	Over 1·5–3% at ¼ value. Over 3–4% at half value. Over 3% at full value.	1·25	Over 1·25–3% at ¼ value. Over 3–4% at half value. Over 4·0% at full value.
	1st–30th Nov.	1·5	Over 1·5–4% at ¼ value. Over 4–5% at half value. Over 5% at full value.	,,	2·0	Over 2–4% at ¼ value. Over 4–6% at half value. Over 6% at full value.	1·5	Over 1·5–4·0% at ¼ value. Over 4·0–5·0% at half value. Over 5·0 % at full value.
				TO END OF CROP				
	1st Dec. to end of crop	2·0	Over 2–4% at ¼ value. Over 4–6 % at half value. Over 6% at full value.	2·5 (to end of crop)	—	—	2·0	Over 2–4% at ¼ value. Over 4–6% at half value. Over 6·0% at full value.

* Specifications for civil and Defence requirements in regard to *Kabli* gram are the same.

SPECIFICATIONS FOR GRAM *DAL*

The quality of gram *dal* has been defined by Government of India as follows:

Gram *Dal* is husked and split grain of gram without the outer skin. It should be in merchantable condition, dry, sweet, clean, wholesome and free from moulds, bad smell and any kind of infection, discolouration and admixture of deleterious substance and also foreign grains, excessive moisture, impurities or damage except to the extent indicated below:

Sl. No.	Admixture or Impurity	Govt. of India (F.A.Q.)	Government of Punjab					
			Civil requirements			Defence requirements		
		Tolerance %	Tolerance %	Rate of recovery for excess impurities or admixture	Rejection %	Tolerance %	Rate of recovery for excess impurities or admixture	Rejection %
1	Dirt *	0·5	0·5	Over 0·5% at 1½ value.	1·0	0·5	Over 0·5% at 1½ value	Over 1·0
2	Damaged grains	1·0	1·0	Over 1·0-2·0% at full value. Over 2·0% at 1½ value.	3·0	1·0	Over 1·0-2·0% at full value.	Over 2·0
3	Touched grains	2·0	2·0	Over 2·0-3% at ½ value. Over 3·0% at full value.	4·0	2·0	Over 2·0-3·0% at ½ value. Over 3·0-4·0% at full value.	Over 4·0
4	Unhusked grains	3·0	3·0	Over 3·0 at full value.	5·0	—	—	—
	Whole	—	—	—	—	1·0	—	Over 1·0
	Split	—	—	—	—	2·0	—	Over 2·0
5	Shrivelled and unripe	5·0	5·0	Over 5-7% at ½ value. Over 7·0% at full value.	8·0	1·0	—	Over 1·0
6	Foreign foodgrains	0·5	0·5	Over 0·5-1% at full value. Over 1·0% at 1½ value.	2·0	0·5	Over 0·5-1·0% at full value.	Over 1·0
7	Weevilled—							
	(*a*) New crop to end of June	-	Nil	Full value.	0·5	Nil	—	Over Nil
	(*b*) 1st July to end of Aug.	—	0·5	Over 0·5% at full value.	1·5	0·5	—	Over 0·5

* Including non-foodgrains, oil seeds, cockles, small particles, flour and all extraneous matter other than food grains.

Specifications for Gram *dal* (*Continued*)

Sl. No.	Admixture or Impurity	Govt. of India (F.A.Q.)	Government of Punjab					
			Civil requirements			Defence requirements		
		Tolerance %	Tolerance %	Rate of recovery for excess impurities or admixture	Rejection %	Tolerance %	Rate of recovery for excess impurities or admixture	Rejection %
	(*c*) 1st Sept. to 31st Oct.	—	1·0	Over 1·2% at ½ value. Over 2·0% at full value.	3·0	1·0	—	
	(*d*) 1st Nov. to end of crop	—	1·5	Over 1·5–3% at ½ value. Over 3·0% at full value.	4·0	1·5	—	Over 1·5
8	Broken grains—							
	(*a*) ¼th to ¾ths	—	0·6	Over 6–8% at ⅛ Over 8·0–10·0% at 3/16 Over 10·0% at ¼ value.	12·0	6·0	Over 6·0% at ⅛ value.	Over 7·25
	(*b*) ⅛th to ¼th	—	4·0	Over 4–6% at ½ value. Over 6–8% at ¾ value. Over 8·0% at full value.	10·0	0·25	—	Over 0·25
9	Moisture ‡ Monsoon period	13·0	—	—	—	—	—	—
	Non-Monsoon period	11·0	—	—	—	—	—	—

‡ **Government of India (F. A. Q. Standards).**— *Dal* shall be absolutely dry to the touch. If excessive moisture is suspected, the goods tendered should be rejected subject to retender after drying in the sun. In case of dispute, however, moisture may be determined by any known methods, *e.g.*, air-oven or vacuum methods.

Punjab Government.—In the case of excessive moisture, weighment of the sample should be carried out before and after drying the *dal* in the sun for at least 6-7 hours. If weather is not clear it should be kept pending till it is clear. Differences found in weight should be calculated for total nett weight of the consignment and deducted from it.

SPECIFICATIONS FOR GRAM FLOUR (*BESAN*)

Fair Average Quality Standards (Govt. of India): *Besan* or Gram Flour shall be prepared by grinding in a roller mill good clean gram, free from all extraneous matter, dirt and other impurities, husk, germs, weevils, and shall be fresh, smooth, powdery stuff. It shall be dry, sweet, without bad smell and in all respects fit for human consumption.

Punjab: The *besin* presented for inspections shall be fresh, dry, sweet, wholesome, free from bran, gram skin, and from admixture of deleterious substance such as grit etc. It must not be discoloured, bitter in taste, foul in smell or in caked (solidified) condition. In case the quality is not up to the mark, the consignment shall be rejected.

Note:—It shall be subjected to inspection by taste, smell and by cooking into *chapatis* if necessary.

SPECIFICATIONS FOR *JOWAR*

Sl. No.	Admixture or Impurity	Government of India (F.A.Q.) Standards		Government of Punjab	
		Tolerance %	Rate of recovery for excess impurities or admixture	Tolerance %	Rate of recovery for excess impurities or admixture
1	Dirt	2·0	Mutual. Over 2–3% at full value. Over 3–5% at full value + cleaning charges to buyers at Rs... per 100 bags. Over 5% at double value + cleaning chargers to buyers at Rs. .. per 100 bags.	2·0	Over 2–3% at full value. Over 3% at full value + cleaning charges to buyers at Rs. 5 per 100 bags. Over 6% at double value + cleaning charges at Rs. 5 per 100 bags.
2	Other food grains	2·0	Over 2–10% at half value. Over 10% at full value.	Nil	Any excess at half value. Over 15% at full value.
3	Other varieties	5·0	Over 5–10% at ¼ value. Over 10% at half value.	—	—
4	Damaged	1·0	Over 1–2% at half value. Over 2% at full value.	1·0	Over 1–2% at half value. Over 2% at full value.
5	Slightly damaged	2·0	Over 2-4% at ¼ value. Over 4–6% at half value. Over 6% at full value.	1·0	Over 1-2% at ¼ value Over 2–5% at half. value. Over 5% at full value.
6	Shrivelled	2·0	Over 2-6% at half value. Over 6% at full value.	1·0	Over 1-4% at ½ value. Over 4% at full value.

Specifications for *Jowar* (*Continued*)

Sl. No.	Admixture or Impurity	Government of India (F.A.Q.) Standards		Government of Punjab	
		Tolerance %	Rate of recovery for excess impurities or admixture	Tolerance %	Rate of recovery for excess impurities or admixture
7	Red grains	—	—	15·0*	Over 15–25% at 1/20 value. Over 25–30% at 1/10 value. Over 30% at ¼ value.
8	Weevilled	—	—	1·0	Over 1–4% at half value.
	1st October to 31st December	Nil	Up to 0·25% at ¼ value. Over 0·25% at full value.		
	1st to 31st January	0·5	0·5–1·0% at ¼ value. Over 1% at full value.		
	1st to end of February	1·0	1–2% at ¼ value. Over 2% at full value.		
	1st–31st March	1·5	1·5–2·5% at ¼ value. Over 2·5% at full value.		
	1st–30th April	2·0	Over 2–3% at ¼ value. Over 3% at full value.		
	1st–31st May	2·0	Over 2–4% at ¼ value. Over 4% at full value.		
	1st–30th June	2·5	Over 2·5–4% at ¼ value. Over 4–5% at half value. Over 5% at full value.		
	1st July to end of season	3·0	Over 3·4% at ¼ value. Over 4–6% at half value. Over 6% at full value.		

* Where the contract is for White *Jowar*.

SPECIFICATIONS FOR MAIZE*

Sl. No.	Admixture or Impurity	Government of India (F.A.Q. Standards)‡		Government of Punjab		
		Tolerance %	Rate of recovery for excess of impurities or admixture	Tolerance %	Rate of recovery for excess impurities or admixture	Rejection %
1	Dirt	1·0	Mutual at full value.	1·0	Over 1·0% at full value.	—
2	Other food-grains	Nil	At half value. Over 10% at full value.	Nil	Any excess at half value. Over 10% at full value.	—
3	Damaged	1·0	Over 1–3% at half value. Over 3% at full value.	3·0	Over 3–5% at full value. Over 5% at full value.	—

* Maize must be thoroughly dried before despatch.

‡ The percentage of free tolerance and maximum permissible limits given above may be varied according to local conditions and experience.

Specifications for Maize (*Continued*)

Sl. No.	Admixture or Impurity	Government of India (F.A.Q. Standards) ‡		Government of Punjab		
		Tolerance %	Rate of recovery for excess of impurities or admixture	Tolerance %	Rate of recovery for excess impurities or admixture	Rejection %
4	Slightly damaged	2·0	Over 2–6% at ¼ value. Over 6% at half value.	3·0	Over 3–5% at ¼ value. Over 5–8% at half value. Over 8% at full value.	—
5	Shrivelled	2·0	Over 2–4% at ¼ value. Over4–6% at half value. Over 6% at full value.	1·0	Over 1–3% at half value. Over 3% at full value.	—
6	Weevilled	1·0	Over 1–3% at half value. Over 3% at full value.	—	—	—
	New crop to end of Febr-uary	—	—	1·0	1–3% at half value. Over 3% at full value	Over 4·0
	1st–31st March	—	—	2·0	Over 2–4% at half value. Over 4% at full value.	Over 5·0
	1st–30th April	—	—	3·0	Over 3–5% at half value. Over 5% at full value.	Over 6·0
	1st May to end of crop	—	—	4·0	Over 4–6% at half value. Over 6% at full value.	Over 8·0

SPECIFICATIONS FOR OATS (*Avena sativa*)

The quality and standards for oats have been defined by the ASC Specifications as follows :—

The oats shall be of current season's crop and shall be sound, dry, sweet, clean and wholesome. Insect damage, damaged and touched grains, foreign grains and other impurities shall be permitted only to the extent indicated below.

The oats shall be a white-coloured variety with hard, plump thin-skinned grains and free from beards.

‡ The percentage of free tolerance and maximum permissible limits given above may be varied according to local conditions and experience.

STANDARDS

(a) *Moisture content* — not more than 10%

(b) *Maximum permissible percentages of impurities.*

(i) *Dirt* (Non-foodgrains, seed and all extraneous matter other than foodgrains) .. .. .. 0·5%

(ii) *Foreign Foodgrains* (*Other than oats*) .. 4 %
Black Oats shall be regarded as a foreign foodgrain and the content shall not exceed 1 %

(iii) *Damaged and touched grains.* .. .. 0·5%

(iv) *Grains damaged by insect.*

New crop to July	Nil
August	0·5%
September	1·0%
October	1·5%
November to new crop	2·5%

The total percentage of impurities under (i), (ii) and (iv) shall not exceed the aggregate of 6%.

AGMARK GRADE DESIGNATIONS AND DEFINITIONS OF QUALITY OF DIFFERENT VARIETIES OF RICE

Variety of rice	GRADE	Foreign matter other than rice	Broken grains	Special Characteristics — Maximum Limits of Tolerance									General Characteristics
				Fragments	Other rices including red	Damaged or discoloured grains	Weevilled grains	Chalky grains	Total	1000 kernel weight g.	Size of grain: Length mm.	Size of grain: Breadth mm.	
Dehradun Basmati rice (raw-milled)	Special	Slight trace	3·0	Nil	1·0	0·25	*	Nil	4·5	—	2 Maximum % of rice less than 6·4 mm. long	—	(1) The grains shall be long, slender, of white creamy or greyish colour and translucent (not chalky).
	A	0·25	7·0	Nil	2·0	1·50	*	Nil	10·0	—	7	—	(2) The rice (*a*) shall possess in a marked degree the natural fragrance characteristic of *Basmati* rice both in the raw and cooked state, (*b*) *Vide V.* (*c*) may contain up to 10% of grains with an appreciable amount of bran thereon.
	B	0·25	12·0	Nil	4·0	0·75	*	Nil	18·0	--	15	—	
Saharanpur Basmati sela rice	Special	Slight trace only	0·5	Nil	3·0	0·25	Nil	1·0	5·0	Not less than 14·0	6·50	—	(1) The grains shall be long, slender, of whi colour and highly tra-

(parboiled and milled)	A	,,	0·75	Nil	7·0	0·35	Nil	1·5	10·0	13·5	6·30	—	slucent and may contain abdominal white (locally known as *til*) in commercially acceptable proportions.
	B	,,	2·00	0·25	10·0	0·75	Nil	2·5	16·0	13·5	,,	—	(2) The rice (*a*) *Vide IV*, (*b*) shall not have been artificially coloured and shall be free from polishing agents other than a slight trace of *maida* (wheat flour).
Nellore rice or *Molukolukulu* (raw-hand pounded)	A	1·0	15·0	1·5	1·5	1·0	Reasonably free	4·0	25·0	15·5–16·0	5·2–5·3	2·3–2·4	(1) The grains shall be reasonably uniform in size, of white cream or greyish colour. (2) The rice (*a*) shall have been handpounded and shall not have been milled or processed in any way by means of power driven machinery, (*b*) *Vide IV* and (*c*) *Vide V*.
Kothmalli samba or white *Sirumani* (raw milled war quality)	Special	Trace	10·0	1·0	2·0	1·0	*	2·0	16·0	11·5–12·5	3·7–4·3	2·3–2·8	(1) The grains shall be reasonably uniform in size, and colour with a fair proproportion of belly whites present.
	A	0·25	15·0	2·0	3·5	2·0	*	3·0	35·75	,,	,,	,,	(2) The rice (*a*) *Vide I*, (*b*) *Vide III*, (*c*) *Vide IV*, (*d*) *Vide V*.

Variety of rice	GRADE	Foreign matter other than rice	Broken grains	Special Characteristics — Maximum Limits of Tolerance: Fragments	Other rices including red	Damaged or discoloured grains	Weevilled grains	Chalky grains	Total	1000 kernel weight g.	Size of grain: Length mm.	Size of grain: Breadth mm.	General Characteristics
Kasipichody or *Bangaruthooga* (raw milled war quality	Special	Trace	4·0	2·0	3·0	Trace	*	Chalky	9·5	9·7–10·0	5·5–6·0	1·5–1·6	(1) The grains shall be reasonably uniform in size of white colour and may be chalky or opaque.
	A	0·5	6·0	3·0	6·5	,,	*	,,	15·5	,,	,,	,,	(2) The rice (*a*) *Vide II*, (*b*) *Vide III*, (*c*) *Vide IV*, (*d*) *Vide V*.
Sirumani or Red *Sirumani* (parboiled milled rice)	Special	Slight trace only	3·0	Nil	1·0	0·25	*	Nil	4·5	15·0–15·5	4·2–4·5	2·4–2·7	(1) The grains shall be small round, reasonably uniform in size, of white or greyish colour and translucent (not chalky).
	A	0·25	5·0	1·0	2·0	1·0	*	Nil	9·25	,,	,,	,,	(2) The rice (*a*) *Vide II*, (*b*) *Vide III*, (*c*) *Vide IV*, (*d*) *Vide V*.
Nellore or *Molagolukulu* rice (raw milled war quality)	Special	Slight trace only	5·0	0·5	2·0	0·5	*	2·0	10·5	15·5–16·0	5·2–5·3	2·3–2·4	(1) The grains shall be reasonably uniform in size, of fairly white or creamy colour.
	A	0·5	10·0	1·0	4·0	1·0	*	4·0	21·0	,,	,,	,,	(2) The rice (*a*) *Vide I*, (*b*) *Vide III*, (*c*) *Vide IV*, (*d*) *Vide V*.

Krishna-kaukulu or *Maha-rajabho-gam* or *Akusannam* rice (raw milled war quality)	Special	Trace	4·0	1·0	3·0	0·5	*	0·5	9·5	13·5–14·0	5·3–5·4	2·0–2·2	(1) The grain shall be reasonably uniform in size and of fairly white colour.
	A	0·25	8·0	2·0	4·0	1·0	*	1·0	17·0	,,	,,	,,	(2) The rice (*a*) *Vide I*, (*b*) *Vide III*, (*c*) *Vide IV*, (*d*) *Vide V*.
Atragada or *Rama-sagara* (raw milled war quality)	Special	Trace	8·0	2·0	2·0	—	*	Chalky	13·0	17·2–18·2	5·5–6·0	2·2–2·5	(1) The grains shall be reasonably uniform in size and colour and may be chalky or opaque.
	A	0·5	12·0	4·0	3·0	0·5	*	,,	20·0	,,	,,	,,	(2) The rice (*a*) *Vide I*, (*b*) *Vide III*, (*c*) *Vide IV*, (*d*) *Vide V*.
Nellore Samba (raw milled war quality)	Special	Trace	8·0	1·0	3·0	0·5	*	2·0	15·0	14·5–16·0	5·2–5·6	2·3–2·5	(1) The grains shall be reasonably uniform in size of fairly white colour and may be opaque.
	A	0·5	12·0	2·0	5·0	1·0	*	0·4	25·0	,,	,,	,,	(2) The rice (*a*) *Vide I*, (*b*) *Vide III*, (*c*) *Vide IV*, (*d*) *Vide V*.
Kusuma rice (raw milled war quality)	Special	Trace	8·0	2·0	2·0	Reason-ably free	*	Chalky	12·5	18·0–19·0	5·8–6·3	2·2–2·5	(1) The grains shall be reasonably uniform in size, of fairly white colour and may be chalky or opaque.
	A	0·5	12·0	5·0	3·0	0·5	*	,,	21·0	,,	,,	,,	(2) The rice (*a*) *Vide I*, (*b*) *Vide III* (*c*) *Vide IV* (*d*) *Vide V*.

Variety of rice	GRADE	Foreign matter other than rice	Broken grains	Special Characteristics — Maximum Limits of Tolerance						Size of grain		General Characteristics
				Fragments	Other rices including	Damaged or discoloured grains	Weevilled grains	Chalky grains	Total	1000 kernel weight g.	Length mm.	Breadth mm.	
G. R. B. 24 *Kichli* or *Kichidi samba* (raw milled war quality)	Special	Trace	5·0	1·0	2·0	Trace	*	Slightly chalky	9·0	12·75–13·75	5·2–5·7	2·0–2·3	(1) The grains shall be reasonably uniform in size, of fairly white colour and may be slightly chalky or semi-opaque.
	A	0·50	10·0	2·0	3·0	0·50	*	,,	16·0	,,	,,	,,	(2) The rice (*a*) *Vide I*, (*b*) *Vide III*, (*c*) *Vide IV*, (*d*) *Vide V*
Delhi *Bhogom* (raw milled war quality)	Special	Trace	4·0	1·0	2·0	Reasonably free	*	Chalky	8·0	14·0–15·0	5·5–6·0	1·9–2·2	(1) The grains shall be reasonably uniform in size, of fairly white colour and may be slightly chalky or opaque.
	A	0·5	10·0	2·0	3·0	0·5	*	,,	16·0	,,	,,	,,	(2) The rice (*a*) *Vide I*, (*b*) *Vide III*, (*c*) *Vide IV* (*d*) *Vide V*.
Korangu Samba Kattai Samba or *Arai Samba* (parboiled	Special	Trace	4·0	1·0	3·0	1·0	*	—	9·5	16·4–17·4	4·8–5·3	2·3–2·6	(1) The grain shall be reasonably uniform in size, of fairly white, creamy or greyish colour and fairly translucent. Abdominal

war quality)													white in commercially acceptable proportion not to be objected to.
	A	0·25	6·0	2·0	5·0	1·5	*	—	15·0	,,	,,	,,	(2) The rice (*a*) *Vide I*, (*b*) *Vide III*, (*c*) *Vide IV* (*d*) *Vide V*.
Nellore Samba (Parboiled milled rice, war quality)	Special	Trace	3·0	1·0	2·0	Trace	*	1·0	8·0	15·5–16·5	5·1–5·6	2·3–2·6	(1) The grains shall be reasonably uniform in size and colour (not chalky) and may contain abdominal white in commercially acceptable proportions.
	A	0·25	6·0	2·0	3·5	0·5	*	1·5	14·0	,,	,,	,,	(2) The rice (*a*) *Vide I*. (*b*) *Vide III*, (*c*) *Vide IV*, (*d*) *Vide V*.
Muthusamba or *Kothmalli Samba* or white *Sirumani*	Special	Slight trace only	3·0	Nil	2·0	0·50	*	Nil	6·0	11·5–12·0	3·7–3·9	2·3–2·5	(1) The grains shall be small round, reasonably uniform in size, of white colour and not chalky.
(parboiled milled rice, war quality)	A	0·25	4·0	1·0	3·0	2·0	*	Nil	10·25	,,	,,	,,	(2) The rice (*a*) *Vide II*, (*b*) *Vide III*, (*c*) *Vide IV*, (*d*) *Vide V*.

* Reasonably free having regard to the age of rice.

I. Shall be prepared as per milling restrictions prescribed by Madras Government in G.O. No. 242 Devt. dated 5th March 1943.

II. Shall receive one polish as per milling restrictions prescribed by Madras Government in G.O. No. 242 Devt. dated 5th March 1943.

III. Shall be reasonably free from paddy.

IV. Shall be free from musty or obnoxious odour and shall carry no signs of mould or contain webs.

V. Shall not have been artificially coloured and shall be free from polishing agents.

SPECIFICATIONS FOR RICE (*Punjab Government*)*

Sl. No.	Variety of Rice	Full Healthy Grains	¾th to Full Grains	Admixture of			Broken Grains			Red Grains	Paddy half hulled and other foreign matter including Rice powder "Nakoo" and dirt	Damaged, shrivelled, weevilled, discoloured and chalky grains
				Superior	Medium and Course	Inferior	Superior variety, name of rice: Over ¼–¾th	Superior variety, name of rice: ¼th and below	Other Varieties			
1	*Basmati*											
	Tolerance %	75	—	7	—	5	10	1	2	8	1	4
	Recovery	—	—	¼	—	½	½	Full	¾	¼ (Over 8-12%)	Full	½ (Over 4–10%)
	(Value)							Value		½ (Over 12%)	—	Full (Over 10%)
2	*Hansaaj* (*Bara*) *Mushkin*, *Parmal*, *Ramjawain* and *Chahora*											
	Tolerance %	70	—	—	15	—	10	2	3	10	1	3
	Recovery	—	—	—	½	—	½	Full	¾	¼ (Over 10–14%)	Full	½ (Over 3–10%)
	(Value)									½ (Over 14%)		Full (Over 10%)
3	*Sone*											
	Tolerance %	75	—	—	10	—	12	3	—	10	1	4
	Recovery	—	—	—	¼	—	½	Full	—	¼ (Over 10–14%)	Full	½ (Over 4–10%)
	(Value))									½ (Over 14%)		Full (Over 10%)
4	*Begami*											
	Tolerance %	80	—	—	—	—	17	3	—	12	1	4
	Recovery	—	—	—	—	—	½	Full	—	¼	Full	½ (Over 4–10%)
	(Value)											Full (Over 10%)

* In this table, the column 'Recovery Value' expresses the rates at which recoveries shall be made whenever impurities or admixture are in excess over the prescribed tolerance percentage.

5	*Dara* and *Santhi*											
	Tolerance %	50	—	—	—	—	10 (*a*), 30 (*b*)	10	—	12	1	4
	Recovery (Value)	—	—	—	—	—	¼ ½	¾	—	¼	Full	½ (Over 4–10%) Full (Over 10%)
6	*Mongra* of Superior Varieties (*c*)											
	Tolerance %	—	7	—	—	—	65 (*d*). 18 (*e*)	10	—	12	2	5
	Recovery (Value)	—	½	—	—	—	— ½	¾	—	¼ (Over 12–16%) ½ (Over 16%)	Full	½
7	White *Tota*											
	Tolerance %	—	7	—	—	—	78	15	—	15	2	6
	Recovery (Value)	—	½	—	—	—	—	¾	—	¼	Full	½
8	White *Kani*											
	Tolerance %	—	—	—	—	—	—	98	—	—	2	6
	Recovery (Value)	—	—	—	—	—	—	—	—	—	Full (Over 2–4%) Reject (Over 4%)	½
9	*Sela Basmati*											
	Tolerance %	80	—	5 (*f*)	—	5	6 (Basmati)	2	2	8	1	4
	Recovery (Value)	—	—	¼	—	½	½	Full	¾	¼ (Over 8–12%) ½ (Over 12%)	Full	½ (Over 4–10%) Full (Over 10%)
10	*Sela* of *Hansraj* (*Bara*), *Mushkin* Parmal											
	Tolerance %	78	—	—	10	—	8	2	2	10	1	—
	Recovery (Value)	—	—	—	½	—	½	Full	¾	¼ (Over 10–14%) ½ (Over 14)%	Full	—
11	*Sela Joshi*											
	Tolerance %	75	—	—	—	—	22	3	—	12	1	4
	Recovery (Value)	—	—	—	—	—	½	Full	—	¼	Full	½ (Over 4–10%) Full (Over 10%)

Sl. No.	Variety of Rice	Full Healthy Grains	$\frac{3}{4}$th to Full Grains	Admixture of			Broken Grains			Red Grains	Paddy half hulled and other foreign matter including Rice powder "Nakoo" and dirt	Damaged, shrivelled, weevilled, discoloured and chalky grains
				Superior	Medium and Course	Inferior	Superior variety, name of rice: Over $\frac{1}{4}$–$\frac{3}{4}$th	Superior variety, name of rice: $\frac{1}{4}$th and below	Other Varieties			
12	*Sela* of *Mongra* of Superior varieties (*g*)											
	Tolerance %	—	13	—	—	—	60, 15 (*h*)	12	—	12	4	6
	Recovery (Value)	—	$\frac{1}{2}$	—	—	—	$\frac{1}{2}$	$\frac{3}{4}$	—	$\frac{1}{4}$ (Over 12–16%) $\frac{1}{2}$ (Over 16%)	Full	Full
13	*Sela* of *White Tota*											
	Tolerance %	—	7	—	—	—	78	15	—	15	2	6
	Recovery (Value)	—	$\frac{1}{2}$	—	—	—	—	$\frac{1}{4}$	—	$\frac{1}{4}$	Full	Full

(*a*) Broken grains of size $\frac{1}{2}$–$\frac{3}{4}$th.
(*b*) Over $\frac{1}{4}$th – below $\frac{1}{2}$.
(*c*) Includes *Basmati*, *Hansraj*, *Mushkin*, *Parmal*, *Ramjawain* and *Chahora*.
(*d*) Refers to superior variety.
(*e*) ,, to *Sone* and coarse rice.
(*f*) Superior varieties include *Hansraj*, *Mushkin* and *Parmal*.
(*g*) Includes *Basmati*, *Hansraj*, *Mushkin* and *Parmal*.
(*h*) Refers to *Sone* and coarse varieties of rice.

SPECIFICATIONS FOR WHEAT

Sl. No.	Admixture or Impurity	Government of India. F.A.Q. Standards Tolerance %	Government of India. F.A.Q. Standards Rate at which recoveries shall be made for exces impurities or admixture	Government of India. A.S.C. Specification Tolerance %	Government of Punjab Tolerance %	Government of Punjab Rate at which recoveries shall be made for excess impurities or admixture — Fair average quality (a)* — Despatch pass terms	Government of Punjab Rate at which recoveries shall be made for excess impurities or admixture — Fair average quality (a)* — Destination pass terms	Government of Punjab Rate at which recoveries shall be made for excess impurities or admixture — Superior (a)
1.	Dirt	1·5	Mutual at full value. Over 1·5–3% at full value. Over 3–5% at full value + cleaning charges to buyers at Rs.....per 100 bags. Over 5% at double value + Rs.....per 100 bags cleaning charges.	2	1·5	Over 1·5–3% at full value Over 3–5% at full value + cleaning charges to buyers at Rs. 5 per 100 bags. Over 5% at double value + Rs. 5 per 100 bags cleaning charges.	Mutual at full value. Over 1·5–3% at full value. Over 3–5% at full value + cleaning charges to buyers at Rs. 15 per 100 bags.	
					0·5	—	—	In case the admixture of dirt or other foodgrains exceeds the tolerance % the wheat will not be accepted as C-591 but will be treated as average quality wheat.

Sl. No.	Admixture or Impurity	Government of India			Government of Punjab			
		F.A.Q. Standards		A.S.C. Specification		Rate at which recoveries shall be made for excess impurities or admixture		
		Tolerance %	Rate at which recoveries shall be made for excess impurities or admixture	Tolerance %	Tolerance %	Fair average quality (a)*		Superior (a)
						Despatch pass terms	Destination pass terms	
2	Other food-grains	2·0	Mutual at half value. Over 2–6% at half value. Over 6% at full value.	4	2·0	Over 2–12% at half value. Over 12% at full value.	Mutual at half value. Over 2–12% at half value. Over 12% at full value + Rs. 10 per 100 bags mixing charges.	Do
3	Damaged	1·0	Over 1–2% at half value. Over 2% at full value.	1	1·0	Over 1–2% at half value. Over 2% at full value.	Over 1–2% at half value, over 2–4% at full value + Rs. 10 per 100 bags mixing charges. Over 4% at double value + Rs. 10 per 100 bags mixing charges.	
4	Slightly damaged	2·0	Over 2–4% at ¼ value. Over 4–6% at half value. Over 6% at full value.	4	1·0	Over 1–3% at ¼ value. Over 3–5% at half value. Over 5% at full value.	Over 1–3% at ¼ value. Over 3% at ½ value + Rs. 10 per 100 bags mixing charges.	
5	Shrivelled	1·0	Over 1–4% at ¼ value. Over 4–6% at half value. Over 6% at full value.	2	1·0	Do.	Over 1–4% at half value. Over 4% at full value.	
6	Moisture i. Moon-soon Period	—	—	10	—	—	—	

ii. Non-monsoon Period	—	—	9	—	—	—	
7 Weevilled:— New crop to end of							
May	Nil	All weevilled grains at full value.	Nil	Nil	Any excess at full value.	—	—
June	Nil	Do.	Nil	Nil	Do.	At full value.	
July	Nil	Up to 0·25% at ¼ value. Over 0·25% at full value.	Nil	Nil	Up to 0·25% at ¼ value. Over 0·25% at full value.	—	—
			0·5		—	Over 0·5–1% at ¼ value. Over 1% at full value.	
August	0·5	Over 0·5–1% at ¼ value. Over 1% at full value.	1	0·5	Over 0·5–1% at ¼ value. Over 1% at full value.	Do.	
September	1·0	Over 1–2% at ¼ value. Over 2% at full value.	2	1·0	Over 1–2% at ¼ value. Over 2% at full value.	Over (1–2%) at ¼ value. Over 2–3% at half value. Over 3% at full value.	
October	1·25	Over 1·25–3% at ¼ value. Over 3% at full value.	2	1·25	Over 1·25–3% at ¼ value. Over 3% at full value.	Do.	
November	1·5	Over 1·5–4% at ¼ value. Over 4% at full value.	3	2·0 (Nov. to new crop)	Over 2–4% at ¼ value. Over 4-5% at half value. Over 5% at full value.	Over 2–3% at half value, over 3% at full value.	
December	1·5	Over 1·5–4% at ¼ value. Over 4–5% at half value. Over 5% at full value.	4	—	—	Do.	
January	2·0	Over 2–4% at ¼ value. Over 4-5% at half value. Over 5% at full value.	(To new crop)	3·0	—	Over 3–4% at half value, Over 4–5% at full value. Over 5% at 1½ value.	

Sl. No.	Admixture or Impurity	Government of India			Government of Punjab			
		F.A.Q. Standards		A.S.C. Specification		Rate at which recoveries shall be made for excess impurities or admixture		
						Fair average quality (a)*		Superior (a)
		Tolerance %	Rate at which recoveries shall be made for excess impurities or admixture	Tolerance %	Tolerance %	Despatch pass terms	Destination pass terms	
	February to end of crop	2·0	Over 2-4% at ¼ value. Over 4–6% at half value. Over 6% at full value.		—	—	—	—
8	Red wheat	20·0	Over 20% at ¼ value.	30	20·0	Over 20% at ¼ value subject to a maximum of 4 as. per md.	—	—
					10·0	—	Over 10% at ¼ value subject to the maximum of 4 as. per maund.	

(*a*) Total mixing charges not to exceed Rs. 10 per 100 bags.

* Total cleaning and mixing charges in any consignment not to exceed Rs. 25 per 100 bags. Total cleaning charges alone not to exceed Rs. 15 for 100 bags.

FRUIT JUICE AND FRUIT SYRUP

Rules relating to Fruit Juices and Fruit Syrups have been specifically mentioned in the Food Adulteration Rules of Bombay and Uttar Pradesh only as shown below. However, the Fruit Products Control Order of 1947 passed by the Government of India are applicable to all the States in India.

Bombay : Lemonades, Lime and Fruit Juices, Syrups, Beverage and Aerated Drinks shall not contain (i) tartaric acid (except in Grape Juice), (ii) more than a trace of phosphoric acid, (iii) extraneous matter not usually present in pure juice and (iv) lead.

Uttar Pradesh : *Fruit Juice* : (i) Fruit juice shall be expressed juice of sound fruit.

(ii) Fruit juice which is obtained from lemon, shall contain not less than 5 grammes of citric acid naturally present in the fruit in 100 milliliters of the juice.

(iii) Fruit juice, which is obtained from lime juice shall contain not less than 6 grammes of citric acid naturally present in the fruit in 100 ml.

(iv) Sulphur dioxide or sulphites calculated as sulphur dioxide in proportion not exceeding 2 grains to the pint or sodium benzoate in proportion not exceeding 8 grains to the pint may be added as preservative in fruit juices.

Fruit Syrup : Fruit Syrup shall be composed of the juices of sound fruit, potable water, and sugar or glucose or both. It shall contain not less than 35 per cent of sugar or glucose, or a mixture thereof by weight and may also contain glycerine not exceeding ten per cent by weight but shall not contain any flavouring substances other than those naturally present in the fruit or fruits from which it has been prepared or orange oil may be added to orange syrup. Prescribed colouring substances may be added provided such additions are duly declared in the label.

Lemon juice syrup and lime juice syrup shall contain not less than 2 grammes of citric acid naturally present in the fruit in 100 millilitres of the syrup.

GHEE

Assam: "Ghee" shall contain only substances, other than curds, which are derived exclusively from the milk of cows or

of buffaloes, and shall conform to such standard of purity as may be prescribed by the Provincial Government in this behalf.

Bengal: "Ghee" is the pure clarified milk fat of cow or buffalo or cow and buffalo. It shall contain only substances, other than curds, which are derived exclusively from the milk of cows or of buffaloes, and shall fulfil such conditions as may be prescribed by the State Government.

Bihar: Cow and buffalo ghee is the pure clarified fat derived solely from the milk of these animals or from the curds of such milk to which no colouring matter or preservatives have been added. The article shall have a characteristic colour, natural pleasant flavour and agreeable taste and shall be free from any objectionable matter. On melting it shall be clear in appearance free from extraneous matter including colour, preservatives, flavouring agents, etc.

Bombay: "Ghee" means ghee prepared exclusively from the milk fat of the cow or buffalo or both.

Coorg: "Ghee" means ghee prepared exclusively from butter made from cow's or buffalo's milk or cream or both.

Madhya Bharat (Indore): The word "ghee" shall mean the substance known as ghee and made exclusively from milk, cream, or both.

Madhya Pradesh: "Ghee" means ghee prepared exclusively from pure clarified milk fat.

Madras: "Ghee" means ghee prepared exclusively from butter made from cow's or buffalo's milk or cream or both.

Mysore: The same as above

Orissa: "Ghee" means ghee prepared exclusively from butter made from cow's or buffalo's or goat's milk or cream or both.

PEPSU: Ghee shall be the clarified fat derived from the milk of cows or buffaloes (*vide* Rules). Ghee means the substance usually known as ghee made exclusively from milk of cow, or buffalo, goat, ewe or any or all of these (*vide* Act).

Punjab: "Ghee" means the clarified fat derived from milk of cows or buffaloes.

Rajasthan (Marwar): "Ghee" means the clarified fat derived from the milk of cow or buffalo or goat or sheep or mixed.

Travancore–Cochin (Cochin): "Ghee" means ghee prepared exclusively from butter made from cow's or buffalo's milk or cream or both.

(Travancore): "Ghee" means the pure clarified milk fat to which no colouring matter or preservative has been added.

It shall be pure clarified butter fat derived solely from cows or buffaloes milk and shall have a characteristic colour, natural pleasant flavour, agreeable taste, and free from any objectionable matter. On melting it shall be clear in appearance, free from extraneous matter including colouring, preservatives and flavouring agents.

Uttar Pradesh: "Ghee" means the pure clarified part of milk fat to which no colouring matter or preservative has been added but does not include waste ghee.

Agmark (Govt. of India): Ghee shall be pure, clarified milk fat only and shall have a natural sweet pleasant odour, agreeable taste and free from rancid or other objectionable flavour. The ghee shall be free from excess moisture and on melting it shall be clear, transparent and free from sediment or foreign colouring matter. The phenolphthalein test, the phytosteryl acetate test and the tests for the presence of animal fats (other than milk fats) shall be negative. The chemical and physical constants of the ghee shall be characteristic of the type of milk (cow, buffalo or mixed) from which it is produced, and of the (season) of the year and the place or district where it is produced.

Special ghee shall be hard and shall have a melting point (complete fusion) not less than 34°C. It shall have well defined granular structure. Its colour shall be white, with or without yellowish or greenish tint and shall be uniform throughout.

General ghee shall be medium hard and shall have a melting point (complete fusion) not less than 30°C. It shall have granular structure not clearly defined but shall not be pasty or greasy. Its colour shall be white, with or without yellowish or greenish tint, uneven distribution of colour being permissible.

Army Service Corps (Govt. of India): (*i*) The ghi (Ghee) shall be blended from genuine clarified butter fat ghi (Ghee) derived solely from the milk of buffaloes and cows.

(*ii*) The blended ghi shall be well clarified, unadulterated, clean, free from moisture and of pleasant taste, smell and appearance.

(*iii*) The ghi shall be blended at a temperature not exceeding 75°C and shall be thoroughly reclarified in the process.

REMARKS

All the States prescribe that Ghee shall be derived from the milk fat of cow or buffalo or both. In addition, Orissa, PEPSU, Marwar and Uttar Pradesh permit the use of milk fat from goat and/or sheep for the preparation of ghee.

N. B.—The **Food Adulteration Committee (1937),** Government of India, recommended that the following definition for Ghee: "Ghee means *ghee* prepared exclusively from pure clarified milk fat of the cow or buffalo or both."

CHEMICAL STANDARDS FOR GHEE—BUFFALO'S

Sl. No.	Authority	Moisture not more than %	B. R. Reading at 40° C.	Sap. value not less than	Iodine value not more than	Reichert value not less than	Polenske value not more than	Free fatty acid not more than %	Peroxide Test, not more than c.c. of N/500 thio sulphate per gram of fat.	Kirschner value not less than
1	Assam	0·75	40·0–42·5	224	—	30·0	—	2·5	—	—
2	Bengal	—	40·0–42·5	222	—	30·0	—	—	—	—
3	Bihar	0·5	40·0–42·5	—	—	30·0	2·5	3·0	5·0	—
4	Bombay	1·0	40·0–44·5	—	—	24·0	—	—	—	—
5	Coorg	1·0	—	—	—	28·0	—	—	—	—
6	Hyderabad	—	40·0–43·0	—	—	22·0	—	—	—	—
7	Madhya Bharat (Indore)	1·0	41·0–44·0	225	41·0	27·0	1·5	0·3	—	—
8	Madhya Pradesh	0·5	40·0–44·5	215–236	—	20·0	—	—	—	—
9	Madras	1·0	—	—	—	28·0	—	—	—	—
10	Mysore	1·0	41·0–44·0	225	41·0	27·0	Not less than 1·5	0·3	—	—
11	Orissa	—	40·0–42·5	—	—	30·0	—	—	—	—
12	PEPSU	—	40·5–43·0	—	—	27·0	1·0–2·0	2·5	—	—
13	Punjab	—	40·0–43·5	—	—	28·0	2·5	2·8	—	—
14	Rajasthan Jaipur	—	40·0–42·5	—	—	24·0	—	2·8	—	—
	Marwar (*b*)	—	41·0–45·0	—	—	22·0	0·5–4·0	2·5	—	—
15	Travancore-Cochin									
	Cochin	1·0	—	—	—	—	—	—	—	—
	Travancore (*c*)—	0·5	40·5–42·5	—	—	28·0	—	2·5	5·0	—
16	Uttar Pradesh (*d*)	0·5	48·0–51·0 at 25° C.	222	—	30·0	—	—	—	—
17	Government of India—									
	(i) Agmark Blue Label (*e*)	0·5	40·5–42·5	—	—	30	1·0–1·75	1·5	—	25·0
	(ii) Army Service Corps (*j*)	—	40·5–42·5 (*f*) or 43·0 (*g*)	—	—	28 (*f*) or 26 (*g*)	0·5–1·8	2·0 (*h*) or 2·5 (*i*)	—	—

(*a*) Phytosteryl Acetate Test shall be negative. (*b*) Melting Point by Phytosteryl Acetate Test shall not be more than 115°C. (*c*) Samples with Reichert values 24 to 28 shall be accepted as pure if they give no proof of the

The **Food Adulteration Committee (1937),** Government of India, recommended the following standards for Buffalo Ghee: moisture, not more than 0·5%; B. R. Reading, 40·5–42·5; saponification value, 226–234; Reichert value, Not less than 30.

The **Central Committee for Food Standards** at its seventh meeting held in 1953, accepted the recommendation of the Expert Committee on Agmark Ghee with the proviso that whenever an anlyst was in doubt he might at his discretion subject the sample to phytosteryl acetate test and other suitable tests. The recommendations of the committee are as follows:

(1) Two types of specifications for ghee are proposed under the Agmark:—

(*a*) All-India Specifications (for areas other than cotton tracts).

(*b*) Reginal Specifications for recognised cotton tracts *

(2) No seasonal specifications for All-India ghee need be laid down.

(3) The following Agmark Specifications for All-India ghee are suggested:—

	Special	General
B. T.	Negative	Negative
P. A. Test	Do	Do
B. R. Reading at 40°C ..	40·0–43·0	40·0–43·0
R. M. Value	Not less than 28·0	Not less than 28·0
Polenske Value	1·0–2·0	1·0–2·0
Moisture Content	Not more than 0·3%	Not more than 0·3%
Percentage of Free Fatty (as Oleic acid)	Not more than 1·2	Not more than 2·5

(4) *Regional Specifications:*

The following regional specifications for recognised cotton tracts of Saurashtra and Madhya Pradesh are suggested :—

	Winter (September to February)	Summer (March to August)
B. T.	Negative	Negative
P. A. Test	Do	Do
B. R. Reading at 40°C ..	41·5–44·0	42·5–45·0
R. M. Value	Not less than 24·0	Not less than 21·0
Polenske Value	0·5–1·2	0·5–1·0
Moisture Content	Not more than 0·3%	Not more than 0·3%
Percentage of Free Fatty Acids (as Oleic acid.)		
(*a*) Special Grade ..	Not more than 1·2%	Not more than 1·2%
(*b*) General Grade ..	Not more than 2·5	Not more than 2·5

presence of vegetable and/or other fats. (*d*) Value for B.R. Reading is not included in the latest U.P. Pure Food Rules, 1952. The figures given relate to earlier Rules (1943). (*e*) If the quality of Ghee corresponds to these standards, they may be graded as (1) special and (2) general, depending upon hardness, melting point, texture and colour of the product. (*f*) Refers to Ghee heating centre, Agra. (*g*) Refers to Ghee heating centre, Bangalore. (*h*) From December to April. (*i*) From May to November. (*j*) The purity of Ghee may be determined by any other recognised methods.

* By Cotton tract is meant that area where cotton seed is extensively fed to the cattle.

CHEMICAL STANDARDS FOR GHEE — COW'S

Sl. N.	Authority	Moisture not more than %	B. R. Reading at 400 C.	Sap. value not less than	Iodine value not more than	Reichert value not less than	Polenske value not more than	Free fatty acid as oleic acid Not more than %	Peroxide Test. Not more than c.c. of N/500 thio. sulphate per gram of fat.	Kirschner value.
1	Assam	0·75	40·0–42·5	222	—	24	—	2·5	—	—
2	Bengal	—	40·0–42·5	220	—	24	—	—	—	—
3	Bihar (*a*)	0·50	40·0–42·5	—	—	24	2·5	3·0	5·0	—
4	Bombay	1·0	40·0–44·5	—	—	24	—	—	—	—
5	Coorg	1·0	—	—	—	28	—	—	—	—
6	Hyderabad	—	40·0–43·0	—	—	—	22	—	—	—
7	Madhya Bharat (Indore)	1·0	41·0–44·0	225	41·0	21	1.5	0·20	—	—
8	Madhya Pradesh	0·5	40·0–44·5	215–236	—	20	—	—	—	—
9	Madras	1·0	—	—	—	—	28	—	—	—
10	Mysore	1·0	41·0–44·0	225	41·0	21	Not less than 1·5	0·20	—	—
11	Orissa	—	40·0–42·5	—	—	24	—	—	—	—
12	PEPSU	—	40·5–43·0	—	—	27	1·0–2·0	2·5	—	—
13	Punjab	—	40·0–43·5	—	—	28	2·5	2·8	—	—
14	Rajasthan									
	Jaipur	—	40·0–42·5	—	—	24	2·5	2·8	—	—
	Marwar (*b*)	—	41·0–45·0	—	—	22	0·5-4·0	2·5	—	—
15	Travancore-Cochin									
	Cochin	1·0	—	—	—	—	—	—	—	—
	Travancore (*c*)	0·5	40·5–42·5	—	—	24	—	2·5	5·0	—
16	Uttar Pradesh (*d*)	0·5	48–51 25° C.	222	—	24	—	—	—	—
17	Govt. of India									
	(i) Agmark Yellow Label (*e*)	0·5	40·5–42·5	—	—	26–28	1·5–2·5	1·5	—	20-25
	(ii) Army Service Corps (*j*)	—	40·5–42·5 (*f*) or 43·0 (*g*)	—	—	28 (*f*) or 26 (*g*)	0·5–1·8	2·0(*h*) or 2·5 (*i*)	—	—

(*a*) Phytosteryl Acetate Test shall be negative. (*b*) Melting Point by Phytosteryl Acetate Test shall not be more than 115°C. (*c*) Samples with Reichert values 24 to 28 shall be accepted as pure if they give no proof of the presence of vegetable and/or other fats. (*d*) Value for B.R. Reading is not included in the latest U.P. Pure Food Rules, 1952. The figures given relate to earlier Rules (1943). (*e*) If the quality of Ghee corresponds to these standards they may be graded as (1) special and (2) general, depending upon hardness, melting point, texture and colour of the product. (*f*) Refers to *Ghi* heating centre, Agra. (*g*) Refers to *Ghi* heating centre, Bangalore. (*h*) From December to April. (*i*) From May to November. (*j*) The purity of *Ghi* may be determined by any other recognised methods.

The **Food Adulteration Committee** (1937), Government of India, recommended the following standards for Cow Ghee: moisture, not more than 0·5%; B.R. Reading, 40·5–42·5; saponification value, 222–226; Reichert value, not less than 24.

Recommendations of the **Central Committee for Food Standards**: *Vide* foot note under table on Buffalo's Ghi.

CHEMICAL STANDARDS FOR GHEE — MIXED (*COW'S AND BUFFALO'S*)

Sl. No.	Authority	Moisture not more than %	B. R. Reading at 40° C.	Sap. value not less than	Iodine value not more than	Reichert value not less than	Polenske value not more than	Free fatty acid as oleic acid. Not more than %	Peroxide Test not more than c. c. of N/600 thio-sulphate per gram of fat.	Kirschner value.
1	Assam	0·75	40·0–42·5	224·	—	28·0	—	2·5	—	—
2	Bengal	—	40·0–42·5	222	—	28·0	—	—	—	—
3	Bihar (*a*)	0·5	40·0–42·5	—	—	28·0	2·5	3·0	5·0	—
4	Bombay	1·0	40·0–44·5	—	—	24·0	—	—	—	—
5	Coorg	1·0	—	—	—	28·0	—	—	—	—
6	Hyderabad	—	40·0–43·0	—	—	22·0	—	—	—	—
7	Madhya Bharat (Indore)	—	41·0–44·0	225	41·0	25·0	1·5	0·28	—	—
8	Madhya Pradesh	0·5	40·0–44·5	215–236	—	20·0	—	—	—	—
9	Madras	1·0	—	—	—	28·0	—	—	—	—
10	Mysore	1·0	41·0–44·0	225	41·0	25·0	Not less than 1·5	0·28	—	—
11	Orissa	—	40·0–42·5	—	—	28·0	—	—	—	—
12	PEPSU	—	40·5–43·0	—	—	27·0	1·0–2·0	2·5	—	—
13	Punjab	—	40·0–43·5	—	—	28·0	2·5	2·8	—	—
14	Rajasthan									
	Jaipur	—	40·0–42·5	—	—	24·0	—	2·8	—	—
	Marwar (*b*)	—	41·0–45·0	—	—	22·0	0·5–4·0	2·5	—	—
15	Travancore-Cochin									
	Cochin	1·0	—	—	—	—	—	—	—	—
	Travancore (*c*)	0·5	40·5–42·5	—	—	28·0	—	2·5	5·0	—

(*a*) Phytosteryl Acetate Test shall be negative. (*b*) The Melting Point by Phytosteryl Acetate Test shall be not more than 115°C. (*c*) Samples with Reichert values 24 to 28 shall be accepted as pure if they give no proof of the presence of vegetable and/or other fats.

Chemical Standards for Ghee – Mixed (*Continued*)

Sl. No.	Authority	Moisture not more than %	B. R. Reading at 40° C.	Sap. value not less than	Iodine value not more than	Reichert value not less than	Polenske value not more than	Free fatty acid as oleic acid. Not more than %	Peroxide Test. not more than c.c. of N/500 thio sulphate per gram of fat.	Kirschner value
16	Uttar Pradesh (*d*)	0·5	48·0–51·0 at 25° C.	222	—	28·0	—	—	—	—
17	Govt. of India—									
	(i) Agmark (*e*)									
	(1) Special Red Label (*f*)	0·5	40·5–42·5	—	—	28·0	1·0–2·0	1·5	—	—
	(2) General Green Label	0·5	40·5–42·5	—	—	28·0	1·0–2·0	2·5	—	—
	(ii) Army Service Corps (*k*)	—	40·5–42·5 (*g*) or 43·0(*h*)	—	—	28 (*g*) or 26 (*h*)	0·5–1·8	2·0 (*i*) or 2·5 (*j*)	—	—

(*d*) Value for B.R. Reading is not included in the latest U.P. Pure Food Rules, 1952. The figures given relate to earlier Rules (1943). (*e*) The purity of ghee shall be tested by such tests as may be laid down from time to time by the Agricultural Marketing Adviser to the Government of India; for instance the Phytosteryl Acetate Test. (*f*) May also be described as "Cow" or "Buffalo" in the case of Ghee corresponding with the chemical and physical constants of cow or buffalo ghee. (*g*) Refers to Ghee heating Centre, Agra. (*h*) Refers to Ghee heating Centre, Bangalore. (*i*) From December to April. (*j*) From May to November. (*k*) The purity of ghee may be determined by any other recognised methods.

The **Food Adulteration Committee** (1937), Government of India, recommended the following standards for Mixed Ghee: moisture, not more than 0·5%; B.R. Reading, 40·5–42·5; saponification value, 222–234; Reichert value, not less than 28.

Recommendations of the **Central Committee for Food Standards**: *Vide* foot note under table on Buffalo Ghee.

GINGER (*Dried*)

Uttar Pradesh: "Ginger" shall be the washed and dried or the decorticated and dried rhizome of *Zingiber officinale* and shall be free from damage by insect-pests. The presence of sulphur dioxide to the extent of 2,000-4,000 parts per million in ginger is permissible for its preservation.

CHEMICAL STANDARDS FOR GINGER (*Dried*)

Sl. No.	Authority	Water soluble extract not less than %	Soluble Extract in 90% Alcohol not less than %	Ash not more than %	Water soluble ash not less than %
1	Uttar Pradesh	10·5	4·5	6·0	1·7

(Chemical Standards have not been laid down by other States for this commodity.)

GROUNDNUTS

Grade designations and definition of quality of hand-picked selected groundnut kernels and groundnuts in shell (AGMARK).

	Grade Designation	Quality Characteristics		Condition
		Number of kernels per ounce	Remarks	
Groundnut kernels	Special Bold		Not more than* 1 oz. (2·43 tolas) of broken, skinned and damaged kernels in a bag.	Hand-picked selected groundnut kernels shall be dry and reasonably uniform in size free from dirt, stones, nuts in shell or other foreign matter.
	No. 1	32–34		
	,, 2	34–36		
	,, 3	36–38		
	Bold No. 1	38–40		
	,, 2	40–42		
Groundnuts in shell	Bold	13–14	Not more than‡ one per cent of discoloured damaged empty and broken nuts by weight.	Hand-picked selected groundnuts in shell shall be dry and reasonably uniform in size with outwardly two well-defined sections in each nut, free from stones, dirt or other foreign matter. The shell shall be clean bright and of whitish colour.

* In the case of groundnut kernels, 'damaged' includes: broken, skinned and damaged kernels.

‡ In the case of groundnut in shell, 'damaged' includes. Discoloured damaged, empty and broken nuts.

HONEY

Uttar Pradesh: Honey shall be the nectar and saccharin exudations of plants gathered, modified, and stored by the honey bee, and shall not contain added sugar or glucose, or artificial sweetening substance or any other added substance.

Army Service Corps (Govt. of India): (*i*) The honey shall be pure natural saccharin product of plants. It shall be of best quality.

(*ii*) The honey shall be pleasant in taste and smell of characteristic flavour, free from adulteration and injurious substances. It shall be free from excess wax.

The honey shall be warranted to keep sound and wholesome in any climate for a period of twelve months from the date of acceptance as marked on the cases.

CHEMICAL STANDARDS FOR HONEY

Sl. No.	Authority	Water not more than %	Ash not more than %	Sucrose not more than %	Reducing sugars not less than %	Direct Rotation at 20°C shall not exceed
1	Uttar Pradesh	20	0·75	—	60	—
2	Govt. of India—Army* Service Corps	20	0·4	6	—	(+11)

* (1) Fiehe's Test shall be negative.
(2) Diastatic activity shall be present.
(3) Starch syrup shall be absent.

ICE CREAM

Bihar: "Ice Cream" is the frozen product of cream milk or skimmed milk or any combination thereof, or of milk products previously heat processed, with sugar and with or without the addition of pure gelatine or vegetable gums.

(*i*) The procedure of heat treatment shall be as follows:—

(1) Ice cream mix shall not be kept at atmospheric temperature for more than one hour before pasteurization;

(2) it shall be subjected to heat treatment comprising of exposure to a temperature of not less than 165°F for about 30 minutes;

(3) the mix shall be cooled down to 40°F within ½ hour of pasteurization;

(*ii*) Ice cream made from a complete cold mix powder, *i.e.* a powder prepared by evaporating down a liquid mix which has been subjected to heat treatment and which requires only the addition of water to make ice cream, need not be heated but shall be frozen within an hour of reconstitution.

Bombay: "Ice Cream" means an article of food mainly prepared from frozen cream or whole milk (not skimmed milk) and sugar (not saccharin).

Travancore: "Ice cream" is a frozen product of cream or milk and sugar with or without a natural flavouring.

Uttar Pradesh: "Ice cream" is the frozen product of milk sweetened with or without the addition of pure vegetable gums.

CHEMICAL STANDARDS FOR ICE CREAM

Sl. No	Authority	Milk fat not less than %	Total Milk Solids not less than %
1	Bihar (*a*)	10·0	18·5
	(*b*)	8·0	16·5
	(*c*)	—	8·5*
2	Uttar Pradesh	5·0	7·5

(*a*) Ice cream.

(*b*) Ice cream to which eggs, fruits, fruit juices, cocoa, chocolate or nuts are added.

(*c*) Skimmed milk ice-cream.

* Non-fatty milk solids.

MALT AND MALTED MILK

Travancore: "Malt" is the clean product obtained by milling or grinding sprouted grain, of which the full enzymic action has been stopped by heating so regulated as to develop the characteristic aroma, and sifting the resultant meal.

"Malted Milk" is the product made by combining whole milk with the liquid separated from a mash of ground barley malt and wheat flour, with or without the addition of sodium chloride, sodium bicarbonate, and potassium bicarbonate in such manner as to secure the full enzymic action of the malt extract and by removing water. The resulting product shall contain not less than 7·5% of milk fat and not more than 3·5% of moisture.

MILK

Assam: In the case of milk (other than *dahi* or *ghol* or skimmed milk labelled and sold as such) the animal from which the milk is derived shall be definitely stated in such manner as the local authority may, by general or special order, require, and the milk shall be the natural fresh secretion from the udder of the animal, from which, except in the case of *dahi* or *ghol* or skimmed milk labelled and sold as such, no ingredient has been extracted, and to which no water or other substance (including any preservative) has been added.

Bengal: In the case of milk (other than condensed, sterilized or desiccated milk in hermetically closed receptacles), the animal from which the milk is derived shall be definitely stated in such manner as the local authority may, by general or special order, require, and the articles sold, exposed for sale or stored for sale, as the case may be, shall be the natural secretion from the udder of such animal, from which no ingredient has been extracted and to which no water or other substance (including any preservative) has been added.

Bihar: Milk is the whole fresh lacteal secretion obtained by the complete milking of one or more healthy animals excluding that obtained within 15 days before and five days after calving or such longer period as may be necessary to render the milk practically colostrum free. The name milk unqualified means cow, buffalo or a mixture of these two milks.

Bombay: "Milk" means the normal clean and fresh secretion drawn from the udder of a healthy cow or buffalo.

Coorg: "Milk" means the normal clean secretion drawn from the udder of cow or buffalo, goat, ass or other animal either completely, or after the first portion of such secretion has been drawn off, to completion, and includes skimmed milk, separated milk and condensed, sterilised or desiccated milk.

Madhya Pradesh: "Milk" means the normal, clean and fresh secretion obtained by complete milking of the udder of a healthy cow or buffalo during the period following at least 72 hours after calving or until colostrum free, whether such secretion has been processed or not.

Madras: "Milk" means the normal clean secretion drawn from the udder of healthy cow or buffalo either completely or, after the first portion of such secretion has been drawn off to completion.

Mysore: "Milk" means the normal secretion drawn from the udder of a healthy cow or buffalo.

Orissa: "Milk" means the normal clean secretion drawn from the udder of a healthy cow, buffalo, goat or sheep, either completely or after the first portion of such secretion has been drawn off to completion.

PEPSU: Cow's milk shall be "the secretion obtained by milking the udder of the cow".

Buffalo's milk shall be "the secretion obtained by milking the udder of the buffalo".

Goat's milk shall be "the secretion obtained by milking the udder of the goat".

Mixed milk (cow's, buffalo's and goat's) shall be "a mixture in any proportion of buffalo's, cow's and goat's milk".

Punjab: The same as above

Rajasthan (Jaipur): The same as above

(Marwar): Cow's milk shall be "the clean and normal secretion drawn from the udder of a healthy cow".

Buffalo's milk shall be "the clean and normal secretion drawn from the udder of a healthy buffalo".

Goat's milk shall be "the clean and normal secretion drawn from the udder of a healthy goat".

Sheep's milk shall be "the clean and normal secretion drawn from the udder of healthy sheep".

Mixed milk shall be "a mixture in any proportion of cow's and buffalo's milk".

Travancore-Cochin (Cochin): 'Milk' means the normal clean secretion drawn from the udder of a healthy cow or sheep or buffalo either completely, or after the first portion of such secretion has been drawn off, to completion.

(Travancore): "Milk" means the whole, fresh, clean lacteal secretion obtained by the complete milking of a healthy cow, sheep, goat or buffalo, excluding that obtained for 15 days before and 5 days after calving or such longer period as may be necessary to render the milk colostrum-free;

Uttar Pradesh: "Milk" means milk derived exclusively from the udder of a cow, buffalo, goat or ewe and includes all milk products.

N.B. The **Food Adulteration Committee (1937)**, Government of India, recommended the following definition of milk: "Milk is the normal clean and fresh secretion obtained by complete milking of the udder of the healthy cow or buffalo or both during the period following at least 72 hours after calving or until colostrum free, whether such secretion has been processed or not".

REMARKS

Milk has been generally defined as the one derived from cow or buffalo. In certain States, *viz.*, Coorg, Orissa, PEPSU Punjab, Rajasthan (Jaipur and Marwar) and Travancore-Cochin, the milk derived from goat and/or sheep is also included in the definition of Milk. In Coorg, the milk of ass or other animals is also mentioned in the definition of milk. It is understood that since ass's milk is not used for any purpose in Coorg, no significance need be attached to the inclusion of ass' milk in the definition of milk. Assam and Bengal have not specified the animal from which milk should be derived. The Central Committee for Food Standards, at its second meeting held in 1944 recommended that in those provinces in which goat's milk was extensively sold to the public, it would be advisable to protect them by including goat's milk in the definition of milk.

CHEMICAL STANDARDS FOR BUFFALO'S MILK

Sl. No.	Authority	Specific gravity at 15·6°C not less than	Milk fat not less than %	Non-fatty solids not less than %	Lactose not less than %	Nitrogen not less than %	Dirt as Sediment not more than parts per 1,00,000	Ash %
1	Assam	1,028	6·0	9·0	—	—	—	—
2	Bengal	—	6·0	9·0	4·4	—	—	—
3	Bihar	—	6·0	9·0	—	—	—	—
4	Bombay	—	6·0	9·0	—	—	—	—
5	Coorg	—	4·5	9·0	—	0·53	5	—
6	Hyderabad	—	6·6	9·0	—	—	—	—
7	Madhya Bharat (Indore)	—	6·0	9·0	—	—	—	—
8	Madhya Pradesh	—	5·0	9·0	—	—	—	—
9	Madras	—	4·5	9·0	—	0·53	5	—
10	Mysore	—	4·0	9·0	—	0·53	5	0·6–1·0
11	Orissa	—	5·0	9·0	—	—	—	—
12	PEPSU	—	5·0	9·0	—	—	—	—
13	Punjab	—	6·0	9·0	—	—	—	—
14	Rajasthan — Jaipur	—	5·0	9·0	—	—	—	—
	Rajasthan — Marwar	—	5·0	8·0	—	—	—	—
15	Travancore-Cochin — Cochin	—	4·5	9·0	—	0·53	5	—
	Travancore-Cochin — Travancore	—	5·0	9·0	—	0·55	5	—
16	Uttar Pradesh	—	5·0	9·0	4·0	—	5	—

CHEMICAL STANDARDS FOR COW'S MILK

Sl. No.	Authority	Specific Gravity at 15.5°C not less than	Milk fat not less than %	Non-fatty solids not less than %	Lactose not less than %	Nitrogen not less than %	Dirt as Sediment not more than parts per 1,00,000	Ash %
1	Assam	1,028	3·5	8·5	—	—	—	—
2	Bengal	—	3·5	8·5	4·4	—	—	—
3	Bihar	—	3·5	8·5	—	—	—	—
4	Bombay	—	3·5	8·5	—	—	—	—
5	Coorg	—	3·0	8·5	—	0·5	5	—
6	Hyderabad	—	3·5	8·5	—	—	—	—
7	Madhya Bahrat (Indore)	—	3·5	8·5	—	—	—	—
8	Madhya Pradesh	—	3·5	8·5	—	—	—	—
9	Madras	—	3·0	8·5	—	0·5	5	—
10	Mysore	—	3·0	8·5	—	0·5	5	0·5–0·75
11	Orissa	—	3·0	8·5	—	—	—	—
12	PEPSU	—	3·5	8·5	—	—	—	—
13	Punjab	—	4·5	8·5	—	—	—	—
14	Rajasthan :—							
	Jaipur	—	3·5	8·5	—	—	—	—
	Marwar	—	3·5	7·5	—	—	—	—
15	Travancore-Cochin — Cochin	—	3·0	8·5	—	0·5	5	—
	Travancore-Cochin — Travancore	—	3·0	8·5	—	0·5	5	—
16	Uttar Pradesh	—	3·5	8·5	4·0	—	5	—

CHEMICAL STANDARDS FOR MIXED MILK (*COW'S AND BUFFALO'S**)

Sl. No.	Authority	Specific gravity at 15.5°C.	Milk fat not less than %	Non-fatty solids not less than %	Lactose not less than %	Nitrogen not less than %	Dirt as Sediment not more than parts per 1,00,000	Ash %
1	Assam	—	—	—	—	—	—	—
2	Bengal	—	—	—	4·4	—	—	—
3	Bihar	—	5·0	9·0	—	—	—	—
4	Bombay	—	—	—	—	—	—	—
5	Coorg	—	3·5	8·5	—	0·5	5	—
6	Hyderabad	—	5·5	8·5	—	—	—	—

* In the States of PEPSU, Punjab and Rajasthan (Jaipur), mixed milk includes goat's milk also.

Chemical Standards for Mixed Milk – (*Continued*)

Sl. No.	Authority	Specific gravity at 15.5°C.	Milk fat not less than %	Non-fatty solids not less than %	Lactose not less than %	Nitrogen not less than %	Dirt as Sediment not more than parts per 1,00,000	Ash %
7	Madhya Bharat (Indore)	—	4·5	8·5	—	—	—	—
8	Madhya Pradesh	—	—	—	—	—	—	—
9	Madras	—	3·0	8·5	—	0·5	5	—
10	Mysore	—	3·0	8·5	—	0·5	5	—
11	Orissa	—	4·5	9·0	—	—	—	—
12	PEPSU	—	3·5	8·6–9·0	—	—	—	—
13	Punjab	—	3·5	8·5–9·0	—	—	—	—
14	Rajasthan: Jaipur	—	3·0	8·5–9·0	—	—	—	—
	Rajasthan: Marwar	—	4·0	8·0	—	—	—	—
15	Travancore-Cochin: Cochin	—	3·0	8·5	—	0·5	5	—
	Travancore-Cochin: Travancore	—	3·0	8·5	—	0·5	5	—
16	Uttar Pradesh	—	3·5	8·5	4·0	—	5	—

CHEMICAL STANDARDS FOR GOAT'S MILK

Sl. No.	Authority	Specific gravity at 15.5°C	Milk fat not less than %	Non-fatty solids not less than %	Lactose not less than %	Nitrogen not less than %	Dirt as Sediment not more than parts per 1,00,000
1	Assam	—	—	—	—	—	—
2	Bengal	—	—	—	—	—	—
3	Bihar	—	—	—	—	—	—
4	Bombay	—	—	—	—	—	—
5	Coorg*	—	—	—	—	—	—
6	Hyderabad	—	—	—	—	—	—
7	Madhya Bharat (Indore)	—	—	—	—	—	—
8	Madhya Pradesh	—	—	—	—	—	—
9	Madras	—	—	—	—	—	—
10	Mysore	—	—	—	—	—	—
11	Orissa	—	—	—	—	—	—
12	PEPSU	—	3·0	8·5	—	—	—
13	Punjab	—	3·5	8·5	—	—	—
14	Rajasthan:	—	3·5	8·5	—	—	—
	Jaipur	—	3·5	8·5	—	—	—
	Marwar	—	3·0	7·0	—	—	—
15	Travancore-Cochin: Cochin	—	—	—	—	—	—
	Travancore-Cochin: Travancore	—	3·0	8·5	—	0·5	5
16	Uttar Pradesh	—	3·5	8·5	4	—	5

* In this State, although 'milk' includes goat's milk, no standards have been prescribed for this commodity.

CHEMICAL STANDARDS FOR SHEEP'S MILK*

Sl. No.	Authority	Milk fat not less than %	Non-fatty solids not less than %	Lactose not less than %	Nitrogen not less than %	Dirt as Sediment not more than parts per 1,00,000
1	Orissa ‡	—	—	—	—	—
2	Rajasthan (Marwar)	6·0	7·5	—	—	—
3	Travancore	3·0	8·5	—	0·5	5
4	Uttar Pradesh	3·5	8·5	4	—	5

* Standards for sheep's milk have not been prescribed by other States.

‡ In this State, although 'Milk' includes sheep's milk, no standards have been prescribed for this commodity.

MILK PRODUCTS

BUTTERMILK

Madhya Pradesh: "Butter Milk" means the product that remains after fat is removed from sour milk or cream. It shall contain at least 8·7% solids excluding fat.

Travancore-Cochin (Cochin): 'Buttermilk' is fermented milk and is the residue left after removal of butter from curds by churning.

(Travancore): "Buttermilk" is the product obtained after removal of butter from curds by churning or otherwise.

In churning it is permissible to add water to curds for facilitating churning, but the resultant buttermilk shall contain not less than 6·3% of milk solids excluding fat.

Uttar Pradesh: "Buttermilk" is the product that remains after removal of fat from milk or cream, sweet or sour, by the process of churning.

CHHANNA

Bengal: *Chhanna* exposed for sale is the product obtained by precipitating curd from boiling milk by the addition of lactic acid liquor.

Bihar: *Chhanna* is the product obtained by precipitating the curd from boiling whole milk of cow and buffalo by the addition of lactic or citric acids.

Madhya Pradesh: *Chhanna* means the substance prepared by precipitating curd from boiling milk by the addition of lactic acid.

Orissa: *Chhanna* is the product obtained by precipitating curd from boiling milk by the addition of lactic acid liquor.

The **Food Adulteration Committee** (1937), Government of India, recommended the following definition of *Chhanna*: "*Chhanna* is the product obtained by precipitating curd from boiling milk by the addition of lactic acid".

CHEMICAL STANDARDS FOR *CHHANNA**

Sl. No.	Authority	Water not more more than %	Fat not less than %	Non-fatty Solids not less than %
1	Assam	—	—	—
2	Bengal	—	10·0	—
3	Bihar‡ { Cow's	65·0	15·0	—
	{ Buffalo's	60·0	20·0	—
4	Bombay	—	—	—
5	Coorg	—	—	—
6	Hyderabad	—	—	—
7	Madhya Bharat (Indore)	—	—	—
8	Madhya Pradesh	—	10·0	—
9	Madras	—	—	—
10	Mysore	—	—	—
11	Orissa	—	10·0	—
12	PEPSU	—	—	—
13	Punjab	—	—	—
14	Rajasthan { Jaipur	—	—	—
	{ Marwar	—	—	—
15	Travancore-Cochin { Cochin	—	—	—
	{ Travancore	—	—	—
16	Uttar Pradesh	—	—	—

* The **Food Adulteration Committee** (1937), Government of India, recommended that the minimum percentage of milk fat in *chhanna* should be 10·0%.

‡ In the case of skimmed milk, cow or buffalo, percentage of non-fatty solids shall not be less than 20.

CHEESE

Coorg: Cheese means cheese made exclusively from milk or cream or both with or without the addition of salt or other innocuous preservative, or of innocuous colouring matter.

Madras: The same as above.

Mysore: The same as above.

Orissa: 'Cheese' means cheese made exclusively from milk or cream or both with or without the addition of salt or other innocuous preservative or of innocuous colouring matter. Cheese shall contain moisture not more than 20 per cent.

Army Service Corps (Govt. of India): (*i*) The cheese shall be of good quality, in good condition, and shall contain not less than 40 per cent of butter fat, calculated on the dried cheese.

(*ii*) The cheese shall be free from any fat other than butter fat and shall not contain any injurious substance. The cheese hall be of pleasant taste and flavour, and shall be supplied from stocks of latest manufacture.

CONDENSED MILK

Assam: "Condensed Milk" means milk "Full cream" or "Skimmed" from which a large proportion of water has been evaporated and to which cane sugar may have been added.

Bengal: "Condensed Milk" means full cream milk or skimmed milk which has been concentrated by the removal of part of its water, whether with or without the addition of sugar, and includes the article commonly known as "evaporated milk", but does not include the article commonly known as "dried milk" or "desiccated milk" or "milk powder".

Bihar: "Condensed milk" means milk or skimmed milk which has been concentrated by the removal of part of its water, whether with or without the addition of sugar, and includes the article commonly known as evaporated milk but does not include the article commonly known as "dried milk" or "milk powder".

Bombay: "Condensed full cream milk" means milk which has been concentrated by removal of part of its water with or without the addition of sugar and includes the article commonly known as "evaporated milk" but does not include the article commonly known as "dried milk" or "milk powder".

"Condensed skimmed milk" means skimmed milk which has been concentrated by removal of part of its water with or without the addition of sugar.

PEPSU: "Condensed milk, full cream sweetened" means milk which has been concentrated by the removal of part of its water, with addition of sugar.

"Condensed milk, full cream, unsweetened" means milk which has been concentrated by the removal of part of its water without the addition of sugar.

"Condensed milk, skimmed, sweetened" means skimmed milk which has been concentrated by the removal of part of its water, with the addition of sugar.

"Condensed milk skimmed, unsweetened" means skimmed milk which has been concentrated by the removal of part of its water, without the addition of sugar.

Punjab: The same as above.

Travancore-Cochin (Travancore): "Condensed Milk" means milk or skimmed milk which has been concentrated by the removal of a considerable portion of its water, whether, with or without the addition of sugar, and includes the article commonly known as "evaporated milk".

Army Service Corps (Govt. of India): *Milk tinned, condensed sweetened.*

(i) The sweetened condensed milk shall be the product obtained by the evaporation of cow's or buffalo's whole milk to which sucrose has been added.

(ii) The sweetened condensed milk shall have a light cream colour and shall not show any signs of caramelization.

(iii) The milk shall not show signs of faulty processing or unhygienic methods of manufacture.

(iv) The milk shall not contain any preservative other than sucrose.

(v) The milk shall not contain any added colouring matter, chemicals or any injurious substance.

(vi) The milk shall reconstitute properly when diluted with water and shall not coagulate on heating.

The product shall be warranted to keep wholesome in a tropical climate for one year from the date of delivery or shipment or the date of acceptance whichever is later.

Milk tinned, evaporated, unsweetened:—

(i) The Milk tinned, evaporated, unsweetened, shall be the sterile unsweetened product obtained by evaporation of fresh milk of cow's or buffalo's or both.

(ii) The milk shall be properly homogenized prior to canning and shall be of pleasant taste, flavour and appearance.

(iii) The milk shall reconstitute easily and shall give a product which approximates to fresh milk.

(iv) The milk shall not contain any injurious substance.

(v) The milk may be fortified with calcium and vitamins by any known accepted method.

The product shall be warranted to keep wholesome in a tropical climate for one year from the date of delivery or shipment or the date of acceptance whichever is later.

CHEMICAL STANDARDS FOR CONDENSED MILK*

Sl. No.	Authority	Fat not less than %		Total Milk solids not less than %			
		Full Cream		Full Cream		Skimmed	
		Unsweetened	Sweetened	Unsweetened	Sweetened	Unsweetened	Sweetened
1	Assam	9·0	—	31·0	—	20·0	26·0
2	Bengal	9·0	9·0	31·0.	31·0	20·0	26·0
3	Bihar	9·0	9·0	31·0	31·0	20·0	26·0
4	Bombay	8·0	—	21·0 (*a*)	—	—	—
5	Hyderabad	—	—	—	—	—	—
6	Madhya Bharat (Indore)	—	—	—	—	—	—
7	Madhya Pradesh	9·0	9·0	31·0	31·0	20·0	26·0
8	Madras	—	—	—	—	—	—
9	Mysore	—	—	—	—	—	—
10	Orissa	9·0	9·0	31·0	31·0	20·0	26·0
11	PEPSU	9·0	9·0	31·0	31·0	20·0	26·0
12	Punjab	9·0	9·0	31·0	31·0	20·0	26·0
13	Rajasthan { Jaipur	—	—	—	—	—	—
	{ Marwar	—	—	—	—	—	—
14	Travancore-Cochin { Cochin	—	—	—	—	—	—
	{ Travancore	—	—	—	—	—	—
15	Uttar Pradesh	7·8	8·0	25·5	28·0	26·5	26·5
16	Govt. of India Army Service Corps (*b*)	8·0	8·0	25·0	29·0	—	—

* The **Food Adulteration Committee** (1937), Government of India, recommended the following standards (absolute) for condensed milk :

Fat not less than %		Total Milk solids not less than %			
Full Cream		Full Cream		Skimmed	
Unsweetened	Sweetened	Unsweetened	Sweetened	Unsweetened	Sweetened
9·0	9·0	31·0	31·0	26·0	26·0

(*a*) Excluding milk fat.

(*b*) In the case of sweetened milk, total solids and sucrose shall not be less than 73% and 35% respectively. Moisture, and acidity (as lactic acid) shall not be more than 27%, and 0·3% respectively. The permissible range for ash content is 1·5–2·0%.

In the case of unsweetened milk, ash shall be 1·4–1·8% and water and acidity (as lactic acid) shall not be more than 75% and 0·35% respectively.

In the case of sweetened as well as unsweetened milk, lead, copper, tin and arsenic (as arsenic acid) shall not be more than 5 p.p.m., 15 p.p.m., 1 grain per pound and 0·0001 oz. per pound respectively.

CREAM

Bombay: "Cream" means that portion of milk, rich in milk fat, which rises to the surface of milk on standing, or which has been separated by skimming or otherwise, and is intended for human consumption. Cream shall not contain any thickening substance.

Coorg: "Cream" means that portion of milk rich in milk-fat which has risen to the surface of milk on standing and has been separated from milk by centrifugal force.

Madras: "Cream" means that portion of milk rich in milk-fat which has risen to the surface of milk on standing and has been removed or which has been separated from milk by centrifugal force.

Mysore: "Cream" means that portion of milk rich in milk-fat which has risen to the surface of milk on standing and has been removed or which has been separated from milk by centrifugal force.

Orissa: "Cream" means that portion of milk rich in milk-fat which has risen to the surface of milk on standing and has been removed or which has been separated from milk by centrifugal force.

Travancore - Cochin (Cochin): "Cream" means that portion of milk rich in milk fat which has risen to the surface of milk on standing and has been removed or which has been separated from milk by centrifugal force.

(**Travancore**): "Cream" means that portion of milk, rich in milk fat which rises to the surface of milk on standing, or which has been separated by skimming or otherwise.

Uttar Pradesh: "Cream" shall be that portion of milk in which either through rest or mechanical separation the greater part of the milk-fat has become concentrated and is intended for human consumption. It shall not contain any added substance.

CHEMICAL STANDARDS FOR CREAM

Sl. No.	Authority	Fat not less than %
1	Assam	—
2	Bengal	—
3	Bihar	—
4	Bombay*	—
5	Coorg	—
6	Hyderabad	—
7	Madhya Bharat (Indore)	20·0
8	Madhya Pradesh	–
9	Madras	—
10	Mysore	20·0
11	Orissa	30·0
12	PEPSU	—
13	Punjab	—
14	Rajasthan { Jaipur	—
	Marwar	—
15	Travancore – { Cochin	—
	Cochin { Travancore	—
16	Uttar Pradesh	40·0

* The fat which separates should conform to the specifications prescribed for ghee.

CURD (*DAHI*)

Bengal: "*Dahi*" is the product obtained by lactic acid fermentation of the pure milk of cow or buffalo and shall have the same percentage of fat as the milk from which it is derived.

Bihar: "*Dahi*" (Curd) is the product obtained from fresh whole milk either of cow or buffalo by natural souring. It shall not contain any ingredient not found in milk.

Skimmed milk or separated milk *Dahi* (or curd) is the product obtained from separated or skimmed milk either of cow or buffalo by natural souring. It shall not contain any ingredient not found in milk.

Bombay: "*Dahi*" means the product obtained by the lactic acid fermentation of milk.

Madhya Bharat (Indore): Curd is the product obtained by lactic acid fermentation of milk.

Madhya Pradesh: "Curd or *Dahi*" shall have the same standard of purity as the milk from which it is prepared by fermenting it with lactic acid.

Mysore: Curd is the product obtained by the lactic acid fermentation of milk.

Punjab: "*Dahi*" is the product obtained by lactic fermentation of the pure milk of cow or buffalo or mixed milk.

Rajasthan (Jaipur): "*Dahi*" is the product obtained by lactic fermentation of the pure milk of cow or buffalo or mixed milk.

(Marwar): "Curds" (*Dahi*) is the product prepared from unskimmed milk.

Travancore-Cochin (Travancore): "Curds" means the product obtained by the lactic acid fermentation of milk or skimmed milk.

Uttar Pradesh: "*Dahi*" is the product obtained by lactic acid fermentation of milk.

CHEMICAL STANDARDS FOR CURD (*DAHI*)

Sl. No.	Authority	Fat not less than %		Non-fatty solids not less than %				
		Cow's	Buffalo's	Cow's	Buffalo's	Skimmed Cow's	Skimmed Buffalo's	Skimmed: unspecified
1	Assam	—	—	—	—	—	—	—
2	Bengal	3·5	6·0	—	—	—	—	—
3	Bihar	3·5	6·0	8·5	9·0	8·7	8·7	8·7
4	Bombay	3·5	6·0	—	—	—	—	—
5	Coorg	—	—	—	—	—	—	—
6	Hyderabad	—	—	—	—	—	—	—
7	Madhya Bharat (Indore) (*a*)	—	—	9·0	9·0	6·1	6·1	6·1
8	Madhya Pradesh	3·0	4·0	8·5	9·0	—	—	—
9	Madras	—	—	—	—	—	—	—
10	Mysore (*b*)	—	—	8·9	9·8	6·1	7·3	8·9
11	Orissa (*c*)	3·0	5·0	—	—	—	—	—
12	PEPSU	—	—	—	—	—	—	—
13	Punjab (*d*)	3·5	5·0	8·0	8·0	—	—	—
14	Rajasthan { Jaipur (*d*)	3·5	5·0	8·0	8·0	—	—	—
	Rajasthan { Marwar	3·5	5·0	—	—	—	—	—
15	Travancore-Cochin { Cochin	—	—	—	—	—	—	—
	Travancore-Cochin { Travancore	—	—	—	—	—	—	—
16	Uttar Pradesh	3·5	3·5	—	—	—	—	—

(*a*) Acidity in terms of lactic acid: curd from milk, not more than 2·82%; curd from skimmed milk, not more than 3·28%.

(*b*) The figures relate to total solids and separate figures for fat, and non-fatty solids are not given. The maximum limits for percentage acidity (Lactic acid) in respect of *Dahi* made from different sources of milk are as follows: Cow's: 2·82, Buffalo's: 3·45; Skimmed (cow's): 3·28; Skimmed (Buffalo's): 3·55; and skimmed (unspecified) 3·82.

(*c*) *Dahi* from mixed cow and buffalo milk and from goat's milk shall contain fat not less than 4·5% and 3·0% respectively.

(*d*) The milk fat shall not be less than 3·5% in case of *Dahi* made from goat's milk and mixed milk.

DRIED MILK

Bengal: "Dried Milk" or "desiccated milk" means full cream milk, or skimmed milk, which has been concentrated to the form of powder or solid by the removal of water.

Bihar: Desiccated (dried) milk or milk powder is the product obtained by the removal of almost all water from milk or separated milk (separation of $\frac{1}{4}$, $\frac{1}{2}$ or $\frac{3}{4}$ or whole of the fat) in such apparatus and method as may be approved by the Government provided that the product does not contain any ingredient not found in milk.

Bombay: "Dried milk" or "Milk Powder" means milk which has been concentrated to the form of powder or solid by the removal of water.

Travancore-Cochin (Travancore): "Dried milk" or "Milk powder" means milk or skimmed milk which has been concentrated to the form of powder by the removal of water.

Army Service Corps (Govt. of India): The Milk powder (separated, spray dried and tinned) shall be derived from whole milk, the product of healthy cows and/or buffaloes, which after the greater part of its fat has been removed has been dried by the spray drying process and reduced to a fine powder.

The milk powder shall be free from rancidity and shall not contain any foreign substance.

The milk powder shall not show evidence of faulty processing or unhygienic methods of manufacture.

The milk powder shall be warranted to keep sound and wholesome in any climate for a period of one year from the date of manufacture.

CHEMICAL STANDARDS FOR DRIED MILK*

Sl. No.	Authority	Fat not less than %				
		Full Cream	Three quarters Cream	Half Cream	Quarter Cream	Skimmed
1	Assam	—	—	—	—	—
2	Bengal	26·0	—	—	—	—
3	Bihar	26·0	20·0	14·0	8·0	less than 8·0
4	Bombay	26·0	—	—	—	—
5	Coorg	—	—	—	—	—
6	Hyderabad	—	—	—	—	—
7	Madhya Pradesh	26·0	20·0	14·0	8·0	—
8	Madras	—	—	—	—	—

* The **Food Adulteration Committee** (1937), Government of India, recommended the following standards (absolute) for dried milk.—

Chemical Standards for Dried Milk – (*Continued*)

Sl. No.	Authority	Fat not less than %				
		Full Cream	Three quarters Cream	Half Cream	Quarter Cream	Skimmed
9	Mysore	—	—	—	—	—
10	Orissa	—	—	—	—	—
11	PEPSU	—	—	—	—	—
12	Punjab	—	—	—	—	—
13	Rajasthan { Jaipur	—	—	—	—	—
	{ Marwar	—	—	—	—	—
14	Travancore – { Cochin	—	—	—	—	—
	Cochin { Travancore	—	—	—	—	—
15	Uttar Pradesh	—	—	—	—	—
16	Govt. of India Army Service Corps (*a*)	—	—	—	—	Not more than 1·0

		Minimum percentage of milk fat.
1	Dried milk, full cream	26·0
2	Dried milk, three-quarters cream	20·0
3	Dried milk, half-cream	14·0
4	Dried milk, one-quarter cream	8·0

(*a*) Total milk solids shall not be less than 94%. Ash, moisture, acidity (as lactic acid) and solubility index shall not be more than 8%. 5%, 1% and 0·5 c.c. respectively.

KHOA

Bihar: *Khoa* is the fresh, clean, non-acid, semi-solid or solid product obtained by evaporation of a part of the water from milk provided that the product does not contain any ingredient not found in milk.

Madhya Bharat (Indore): *Khoa* or *Mawa* is pure desiccated milk of cow or buffalo. It shall be derived exclusively from milk and shall not contain any ingredient not found in milk.

Madhya Pradesh: *Khoa* means milk remaining after a part of its water is removed by heating. It shall not contain any ingredient which is not derived exclusively from milk.

PESPU: *Khoa* is the milk derived from cows or buffalos the moisture from which has been partially removed by heat.

Punjab: The same as above

Rajasthan (Jaipur): The same as above

(Marwar): The same as above

Uttar Pradesh: *Khoa* which is derived from milk by partial

desiccation of water therefrom by the process of heating, shall not contain any ingredient not found in milk.

N.B. The **Food Adulteration Committee** (1937), Government of India, recommended the following definition of *Khoa* : "*Khoa* is milk derived from cows or buffalos, partof the water of which has been removed by heating and it shall not contain any ingredient not found in milk."

CHEMICAL STANDARDS FOR *KHOA*

Sl. No.	Authority	Moisture not more than %	Milk fat not less than %
1	Assam	—	—
2	Bengal	—	—
3	Bihar*	35·0	20·0
4	Bombay	—	—
5	Coorg	—	—
6	Hyderabad	—	—
7	Madhya Bharat (Indore)	—	15·0
8	Madhya Pradesh	10·0	20·0
9	Madras	—	—
10	Mysore	—	—
11	Orissa	—	15·0
12	PEPSU	10·0	20·0
13	Punjab	10·0	20·0
14	Rajasthan { Jaipur	10·0	20·0
	{ Marwar	10·0	20·0
15	Travancore-Cochin { Cochin	—	—
	{ Travancore	—	—
16	Uttar Pradesh	—	15·0

* In the case of skimmed milk *khoa*, percentage of water shall not exceed 35·0.

SKIMMED MILK

Bihar : Skimmed or separated milk is the milk from which milk fat has been removed to such an extent that the fat content of the milk is below the legal standard of whole milk.

Bombay : "Skimmed milk" is milk from which all or part of the milk fat has been removed by mechanical or any other process and includes "separated milk" or machine skimmed milk.

Madhya Bharat (Indore) : Skimmed milk shall mean milk from which substantially all of the milk-fat has been removed.

Separated milk shall mean milk which has been "whirled" in a centrifugal apparatus.

Orissa: "Skimmed milk" means milk from which milk fat has been extracted.

Travancore-Cochin (Travancore): "Skimmed milk" or "separated milk" means milk from which all or part of the milk fat has been removed.

Uttar Pradesh: "Skimmed milk" is milk from which substantially all the milk fat has been removed.

"Separated milk" is milk from which fat has been removed by whirling in a centrifugal apparatus.

CHEMICAL STANDARDS FOR SKIMMED MILK *

Sl. No.	Authority		Milk Solids (non-fatty) Not less than %	Nitrogen not less than %	Ash not more than %	Dirt not more than parts per 1 00,000
1	Assam		—	—	—	—
2	Bengal		9·0	—	—	—
3	Bihar		8·7	—	—	—
4	Bombay		8·7	—	—	—
5	Coorg		—	—	—	—
6	Hyderabad		—	—	—	—
7	Madhya Pradesh		8·7	—	—	—
8	Madras		—	—	—	—
9	Mysore (*a*)	Cow's	8·5	0·50	0·5–0·75	5
		Buffalo's	9·0	0·53	0·60–1·00	5
10	Orissa		9·0	—	—	—
11	PEPSU		—	—	—	—
12	Punjab		—	—	—	—
13	Rajastan	Jaipur	—	—	—	—
		Marwar	—	—	—	—
14	Travancore-Cochin	Cochin — Cow's	8·5	0·50	—	5
		Cochin — Buffalo's	9·0	0·53	—	5
		Travancore — Cow's	8·5	0·50	—	5
		Travancore — Buffalo's	9·0	0·55	—	5
15	Uttar Pradesh		8·7	—	—	5

* The **Food Adulteration Committee** (1937), Government of India, recommended the following standards (absolute) for skimmed milk:

	Minimum percentage of milk solids, other than milk fat
1 Skimmed or separated milk	8·7
2 Skimmed milk reconstituted form skimmed milk powder in accordance with the instructions on the label of the container.	8·7

(*a*) Unspecified milk shall correspond to the standards for Cow's milk.

SAFFRON

Bombay: 'Saffron' means dried Stigmata and tops of Styles of *Crocus sativus*.

Saffron (*a*) shall not lose more than 12 per cent of its weight when dried at 100°C (212°F) to constant weight, (*b*) shall not contain more than 5 per cent of petroleum ether extract and (*c*) shall not contain any foreign colouring matter or any other foreign matter, organic or inorganic, *e.g.*, sugar, barium sulphate, chalk, gypsum and sodium sulphate.

SAGO

Bombay: Sago means a starch product derived exclusively from Sago palms (*Arenga saccharifera, Metroxylon Rumphii, Caryota urens, Metroxylon laeve, Metroxylon sagus, Metroxylon koenigii* and other allied species) and free from foreign starch and matters such as lime, talcum, etc.

PEPSU: A starch obtained from the pith of certain species of palms. The starch granules must have the characteristic appearance under the microscope.

Punjab: The same as above.

Travancore – Cochin (Travancore): "Sago" is the starch derived from the pith of several varieties of palm trees (genera *Metroxylon, Arenga and Borassus*), indigenous in the East Indies.

N.B. The **Central Committee for Food Standards,** Government of India at its 3rd meeting held in 1946 recommended the following definition of Sago: "Sago is the product derived exclusively from Sago palms (*Arenga saccharifera, Metroxylon Rumphii, Caryota urens, Metroxylon laeve, Metroxylon sagus, Metroxylon koenigii* and other allied species)". The Committee at its 7th meeting held in 1953 re-examining this point recommended that sago made from tapioca starch should be termed as "Tapioca Globules".

CHEMICAL STANDARDS FOR SAGO

Sl. No.	Authority	Moisture not more than %	Ash not more than %	Carbohydrate not less than %	Protien not less than %
1	PEPSU	12·0	0·1	87·0	0·20
2	Punjab	12·0	0·1	87·0	0·20

SALT

Indian Standards Institution: Edible common salt shall be a crystalline solid, white or pale pink or light grey in colour, free from visible contamination with clay, grit and other extraneous adulterants and impurities.

Chemical Standards (I. S. I.)

1. Sodium chloride (NaCl) .. Not less than 96·0%
2. Matter insoluble in water .. Not more than 1·0%
3. Matter soluble in water other than sodium chloride .. Not more than 3·0%
4. Moisture: unless agreed otherwise between the purchaser and the vendor, common salt shall not contain moisture in excess of six per cent of the weight of the undried sample.

Government of India, in August 1951, decided that edible salt should contain 92% of sodium chloride. This standard was raised to 93% (NaCl) in 1952 and 94% in 1953. The Government's object is to achieve the standard of 96% NaCl prescribed by the Indain Standards Institution as early as practicable.

SUGAR

CANE SUGAR

Bengal: Sugar is any substance sold as sugar including all varieties of it.

PEPSU: Cane sugar shall be the refined product obtained from *gur*.

Panjab: The same as above.

Rajasthan (Jaipur): The same as above.

(Marwar): Cane sugar shall be the refined product obtained from gur or direct from juice of sugar cane.

Army Service Corps (Govt. of India): (*i*) The sugar shall be of good keeping quality, the produce of sugar cane or beet, granulated, dry, in good condition and free from adulterants or injurious substances.

(*ii*) The sugar shall be of even crystal and colour.

Agmark (Govt. of India): The *Bura* sugar (*a*) shall be prepared

exclusively from either *Khand* or from factory sugar after remelting and adequately clarifying the product used. *Khand* is white powder sugar prepared by treating *rab* (massecuite prepared in open pans) with *sewar* (*Hydrilla verticillata*) or by centrifuging. The process of clarification may be effected by means of any of the agents normally used for the purpose including milk, *sujji* (a mixture of crude sodium carbonate and sodium sulphate) lemon juice, *tatari* (a tartarate) alum or *bhindi* (*Hibiscus Esculentus*) water. Bleaching agents shall not be used.

(*b*) Shall be of fine sandy texture and free from clods;

(*c*) Shall be dried to such an extent as can reasonably maintain its weight and colour;

(*d*) Shall be free from any objectionable flavour.

CHEMICAL STANDARDS FOR CANE SUGAR*

Sl. No.	Authority	Moisture not more than %	Ash not more than %	Sucrose content not less than %	Total sugar content not less than %	Colour (a)
1	Assam	—	—	—	—	—
2	Bengal	—	0·70	96·5	—	—
3	Bihar	—	—	—	—	—
4	Bombay	—	—	—	—	—
5	Coorg	—	—	—	—	—
6	Hyderabad	—	—	—	—	—
7	Madhya Bharat (Indore)	—	—	—	—	—
8	Madhya Pradesh	—	—	—	—	—
9	Madras	—	—	—	—	—
10	Mysore	—	—	—	—	—
11	Orissa	—	—	—	—	—
12	PEPSU	1·5	0·7	96·5	—	—
13	Punjab	1·5	0·7	96·5	—	—
14	Rajasthan (Jaipur)	1·5	0·7	96·5	—	—
	(Marwar)	1·5	0·7	96·5	—	—
15	Travancore–Cochin (Cochin)	—	—	—	—	—
	(Travancore)	—	—	—	—	—
16	Uttar Pradesh	—	—	—	—	—

* The **Central Committee for Food Standards,** Government of India at its 6th meeting held in 1951, recommended that *bura* should contain 95% total sugar expressed as sucrose and should not contain more than half percent of its weight as insoluble ash. It should be free from all poisonous matter. Further, the Committee recommended that in the case of *Khandsari* the minimum sugar content in terms of sucrose may be laid down as 90%.

(*a*) The colour standards corresponding to the various prescribed shades are issued by the Agricultural Marketing Adviser to the Government of India.

Chemical Standards for Cane Sugar – (*Continued*)

Sl. No.	Authority	Moisture not more than %	Ash not more than %	Sucrose content not less than %	Total sugar content not less than %	Colour (*c*)
17	Government of India					
	(i) *Agmark* (*a*)					
	Special Refined (*b*) Black Label	Shall be dried to such an extent as can reasonably maintain its weight and colour.	0·5	95·0	99·0	Extra white
	Special (Red Label)		0·5	95·0	99·0	Milk white
	Grade A 1. (Blue Label)		0·5	95·0	98·0	Moon light
	Grade A 2. (Yellow Label)		0·5	95·0	98·0	Light cream
	Grade B (Green Label)		0·5	95·0	98·0	Cream
	(ii) Army Service Corps (*e*)	0·7	0·3	99·0	—	—
18	Indian Institute of Sugar Technology (*d*)	Quality of sugar is determined by colour and grain size. A number of standards have been prescribed.				

(*a*) These standards are applicable to *Bura* sugar. A tolerance of 0·5 per cent may be allowed in respect of total sugar contents of various grades excepting "Special Refined".

(*b*) To allow for accidental errors in grading, a tolerance of ½ per cent may be allowed in respect of total sugar contents of the various grades excepting 'Special Refined'.

(*c*) The colour standards corresponding to the various prescribed shades are issued by the Agricultural Marketing Adviser to the Government of India.

(*d*) The Bureau of Sugar Standards at the Indian Institute of Sugar Technology introduced the Indian Sugar Standards in 1935 for grading sugars manufactured by the modern vacuum pan factories. The chemical method was found unsuitable for this purpose as the difference between the sucrose contents of different qualities of sugar were extremely small and within the range of normal errors of sampling and analysis. Only physical standards, based on the colour and grain size were, therefore, prescribed.

The Indian Sugar Standards originally consisted of a set of standard grades for crystal and crushed sugar. There were 17 combined colour and grain grades for crystal sugar and 3 colour grades for crushed sugar. The working of these combined grades was found to be not entirely satisfactory and separate grades for colour and grain size were issued in 1936. These standards together with minor modification comprise the present standards.

During the year 1949–50, for crystal sugar there were eleven colour standards denoted by 29, 28, 27, 26, 25, 24, 23, 22, 21, 20 and 19 in the descending order of colour, 29 denoting the whitest and 19 representing the darkest (brown) quality of sugar, and eight grain standards denoted by AA, A, B, C, D, E, F. and G in the descending order of grain size. For crushed sugar, there were three colour standards expressed by the number 13, 12, and 11 in the descending order of colour. These grade standards are issued in square bottles of colourless glass of special type, properly sealed, numbered and assembled in a teak wood box.

These standards were approved by the **Central Committee for Food Standards**, Government of India, at its 4th meeting held in 1947.

(*e*) Other substances shall not be more than 0·5 per cent.

The sugar shall conform to the following grades of size of grain and colour :—

Size of grain	D, E.	Indian Sugar Standards.
Colour	27, 28.	

GUR

Orissa: '*Gur*' means *gur* prepared by boiling juice extracted or pressed out from sugar cane, palmyra or date trees.

PEPSU: *Gur* shall be the inspissated juice expressed from the sugar cane.

Punjab: The same as above.

Rajasthan (Jaipur): The same as above.

(Marwar): The same as above.

Agmark (Govt. of India): (*a*) The *Gur* shall be prepared exclusively from the clarified juice of sugar cane,

(*b*) shall be prepared in the form of shaped solid lumps (*Bheli*, *Chakki*, *Luddoos*, etc.) which shall be of firm consistency–not sticky or plastic,

(*c*) shall be reasonably free from extraneous matter such as bagasse, dirt and other impurities, the combined total of which shall be less than 1 per cent by weight,

(*d*) shall be dried to such an extent as *reasonably to maintain its colour, consistency and weight,

(*e*) shall bear no signs of superficial sweet or mould, and

(*f*) shall be sweet to the taste and not possess a sour, salty or other objectionable flavour.

Gur of extra special grade shall be made only from cane juice which shall have been adequately clarified by means of vegetable activated carbon in addition to the normal methods of clarification. The total impurities in such *gur* shall not exceed 0·2 per cent by weight. The process of clarification may be effected by means of any of the agents normally employed for the purpose including mucilaginous extract of *Sukhlai* (*Kydia Calycina*), *Ceola* (*Hibiscus Ficulneous*), *Bhindi* (*Hibiscus Esculentus*) etc., or milk, soda (sodium carbonate), etc. or by adequately removing the scum during the boiling process. Bleaching agents shall not be used.

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* Having due regard to climatic factors and conditions under which the produce may have been handled, transported or stored.

CHEMICAL STANDARDS FOR *GUR**

Sl. No.	Authority	Moisture not more than %	Insoluble solids not more than %	Total sugars not less than %	Colour	Texture
1	Assam	—	—	—	—	—
2	Bengal	—	—	—	—	—
3	Bihar	—	—	—	—	—
4	Bombay	—	—	—	—	—
5	Coorg	—	—	—	—	—
6	Hyderabad	—	—	—	—	—
7	Madhya Bharat (Indore)	—	—	—	—	—
8	Madhya Pradesh	—	—	—	—	—
9	Madras	—	—	—	—	—
10	Mysore	—	—	—	—	—
11	Orissa	12	3	80	—	—
12	PEPSU	12	3	80	—	—
13	Punjab	12	3	80	—	—
14	Rajasthan { Jaipur	12	3	80	—	—
	{ Marwar	12	3	80	—	—
15	Travancore-Cochin { Cochin	—	—	—	—	—
	{ Travancore	—	—	—	—	—
16	Uttar Pradesh	—	—	—	—	—
17	Government of India *Agmark*					
	(i) Extra Special (White label)	—	0·2	—	Cream or light golden	Granular (*Rawedar* or *Danedar*)
	(ii) Special (Red label)	—	—	—	Golden	do
	(iii) A. I. (Biue label)	—	—	—	Dark-golden	Either granular (*Rawedar* or *Danedar*) or smooth (*chicna*)
	(iv) A. II (Yellow label)	—	—	—	Light brown	do
	(v) B (Green label)	—	—	—	Brown	do

* The **Central Committee for Food Standards**, Government of India, at its 7th meeting held in 1953 recommended the following specifications for *Gur:*

Gur shall be free from substances deleterious to health and shall conform to the following standards on dry weight basis:

(*i*) Total sugar not less than 90% of which not less than 70% shall be sucrose.

(*ii*) Extraneous matter insoluble in water not more than 2%.

(*iii*) Total ash not more than 6%.

(*iv*) Ash insoluble in hydrochloric acid (HCl) not more than 0·2%.

Gur other than that of the liquid or semi-liquid variety shall not contain more than 10% moisture as determined by the steam oven method.

SUJI

Army Service Corps (Govt. of India): The *Suji* shall be the purified middlings obtained from the milling of wheat which conforms to A.S.C. Specification No. 224 (New Series) or from imported wheat and is acceptable to the milling agents. The wheat shall be effectively cleaned prior to milling and milled by roller mill process.

The *Suji* shall not be artificially bleached. It shall be free from bran, flour, other offals, insect infestation, fungus infection, dirt and other impurities and shall have characteristic taste and smell and be in all respects fit for human consumption.

The *Suji* shall conform to the following standards in respect of moisture, ash content and granularity:

Moisture shall not exceed	12·5%.
Ash shall not exceed	1·5%.

Granularity will be such that it will pass through a No. 20 sieve but not more than 15 per cent will pass through a No. 30 sieve.

TEA

Assam: Tea including tea dust and tea fannings shall be the buds, leaves and adjacent stalks of *Camellia Sinensis* (L), O. Ktze, Syn. *Thea Sinensis* (L) Sims., prepared by the usual trade processes and conforming in variety and place of production to the name it bears. It shall not contain any tea which has been in any measure deprived of its proper quality, strength or virtue by steeping, infusion, decoction or other means or any foreign leaves.

Bengal: Tea is the leaves and buds of various species of *Thea* prepared by the usual trade processes of fermenting, drying and firing and conforming in variety and place of production to the name it bears. Tea includes all forms of tea, such as tea dust, tea sweepings, tea fannings and stalk tea intended for human consumption. Where leaves are present not conforming in structure to those of the *Camellia* genus, it shall be presumed until the contrary is proved that the tea is not genuine by reason of the addition thereto of extraneous leaves.

Bihar: The tea leaves should conform in structure to those of *Camellia* genus of species *Thea Sinensis*.

Bombay: "Tea" means tea comprised exclusively of the leaves, leaf buds and adjacent stalks of varieties of *Thea*

Sinensis L. Tea, which is not as defined or which contains tea which has been deprived in any measure of its proper quality or strength by steeping, decoction or other means or which contains any foreign substance, even when it conforms to the standards shall be deemed to be not of the nature, substance or quality which they purport to be.

Coorg: Tea shall be derived exclusively from the leaves and buds of plants of the *Camellia* genus and *Thea* species.

Madhya Pradesh: Tea shall be a production exclusively from leaves and buds of plants of the *Camellia* genus and *Thea* species and shall contain no foreign leaves.

Madras: Tea shall be derived exclusively from the leaves and buds of plants of the *Camellia* genus and *Thea* species.

Mysore: The same as above.

Orissa: Tea shall be deemed to be below the standard if it contains leaves not conforming in structure to those of the *Camellia* genus.

PEPSU: Tea shall be "The dried leaves and buds of various species of tea belonging to the genus *Camellia*."

Punjab: Tea shall be "The dried leaves and buds of various species of *Thea* belonging to the genus *Camellia*."

Rajasthan (Jaipur): Tea shall be "The dried leaves and buds of various species of tea belonging to the genus *Camellia*."

(Marwar): The same as above.

Travancore-Cochin (Cochin): Tea shall be derived exclusively from the leaves and buds of plants of the *Camellia* genus and *Thea* species.

(Travancore): Tea is the fermented and dried leaves and buds of the plants of the *Camellia* genus and *Thea* species.

Uttar Pradesh: Tea shall be derived exclusively from the leaves and buds of various species of tea and prepared by the usual trade processes. The structure of tea leaves shall be that of the *Camellia* genus.

Army Service Corps (Govt. of India): (*i*) The tea shall be a blend of medium quality with good colour and fair size leaf, consisting of pure Indian teas only.

(*ii*) The tea shall be dry, in sound condition, free from impurities and adulteration, and shall produce an infusion of good colour and a liquor of pleasant taste and flavour.

(*iii*) The tea should conform to the following analysis:

B.O.P	–	20%
Broken Pekoe	– Not less than	30%
Broken Tea	– Not more than	10%
Fannings	– Not more than	15–20%
B.P.S. or Milled Pekoe	–	20–25%

REMARKS

Tea has been defined by fourteen Authorities including A.S.C. While Assam and Bombay definitely state that tea shall not contain any tea which has been in any measure deprived of proper quality, strength or virtue by steeping, infusion or decoction or other means, other States have not included this point in their definition of tea. Assam, Bengal and Bombay permit the inclusion of stalks in tea whereas the other States permit leaves and buds only.

CHEMICAL STANDARDS FOR TEA

Sl. No.	Authority	Moisture not more than %	Water extract not less than %	Total ash on dry basis %	Water soluble ash. Not less than % (of total ash)	Ash insoluble in (dil) HCl. Not more than %	Alkalinity of soluble ash as K_2O. %
1	Assam	—	35	4–8	50	1·0	—
2	Bengal	—	30	4–8	40	—	—
3	Bihar	—	30	4–8	40	—	—
4	Bombay	—	30	4–8	40	1·0	1·3–2·0
5	Coorg	—	—	4–8	40	1·0	—
6	Hyderabad	—	—	—	—	—	—
7	Madhya Bharat (Indore)	—	—	—	—	—	—
8	Madhya Pradesh	—	30	4–8	40	—	—
9	Madras	—	—	4–8	40	1·0	—
10	Mysore	—	40	4–8	(*a*)	—	1·7–2·0
11	Orissa	—	30	4–8	40	—	—
12	PEPSU	—	30	4–8	40	—	—
13	Punjab	—	30	4–8	40	—	—
14	Rajasthan { Jaipur	—	30	4–8	43	—	—
	Marwar	—	30	4–8	40	—	—
15	Travancore – { Cochin	—	—	4–8	40	1·0	—
	Cochin { Travancore	10·0	30	4–8	40	1·0	—
16	Uttar Pradesh (*b*)	—	30	4–8	40	—	—
17	(Govt. of India) Army Service Corps.	9·0	—	Not more than 6·0	—	0·5	—

(*a*) Water insoluble ash on total weight basis shall not exceed 30·%.

(*b*) Tea shall not contain more than 10% of tea stalks.

TURMERIC

Bihar : Turmeric or *Curcuma* of Indian saffron (*Haldi*) is the dried tuber or underground stem of *Curcuma tinctoria* or *longa* and *C. rotunda* L. a perennial herb of the ginger family.

Bombay : Turmeric (root or powder) means the dried rhizome or bulbous root of plants of the *Curcuma* genus and *longa* species.

Madras : "Turmeric" means the dried rhizome or bulbous root of plants of the *Curcuma* genus or *longa* species and includes turmeric in any form whatsoever including powder form.

Uttar Pradesh : Turmeric shall be the dried rhizome or bulbous root of plants of the *Curcuma* genus or *longa* species, and shall include turmeric in whatsoever form. It shall be free from damage by insect pests.

N.B. The **Central Committee for Food Standards,** Government of India, at its third meeting held in 1916, recommended that turmeric should be completely free from weevil infestation and that turmeric should be free from any (extraneous) colouring matter.

CHEMICAL STANDARDS FOR TURMERIC*

Sl. No.	Authority	Moisture not more than %	Total Ash not more than %	Water soluble Ash not more than %	Total Nitrogen not less than %	Total Water extract not less than %	Lead not more than P. P. M.
1	Assam	—	—	—	—	—	—
2	Bengal	—	—	—	—	—	—
3	Bihar (*a*)	—	6·0	—	—	—	—
4	Bombay (*b*)	—	—	—	—	—	5
5	Coorg	—	—	—	—	—	—
6	Hyderabad	—	—	—	—	—	—
7	Madhya Bharat (Indore)	—	—	—	—	—	—
8	Madhya Pradesh	—	—	—	—	—	—

* The **Central Committee for Food Standards,** Government of India, at its 6th meeting, held in 1951, recommended that the maximum limits of lead in turmeric should be fixed at 2·5 parts per million.

(*a*) The article shall be free from all harmful colouring and other extraneous matter. The characteristic boric acid test for turmeric shall be positive.

(*b*) Turmeric (root or powder) shall not contain lead chromate, other artificial colouring matter or foreign starch.

Chemical Standards for Turmeric – (*Continued*)

Sl. No.	Authority	Moisture not more than %	Total ash not more than %	Water soluble Ash not more than %	Total Nitrogen not less than %	Total Water extract not less than %	Lead not more than P. P. M.
9	Madras (*c*)	—	—	—	—	—	5
10	Mysore	—	—	—	—	—	—
11	Orissa	—	—	—	—	—	—
12	PEPSU	—	—	—	—	—	—
13	Punjab	—	—	—	—	—	—
14	Rajasthan { Jaipur / Marwar	— / —	— / —	— / —	— / —	— / —	— / —
15	Travancore – Cochin { Cochin / Travancore	— / —	— / —	— / —	— / —	— / —	— / —
16	Uttar Pradesh (*c*)	10·0	9·0	4·0	1·0	10·0	5

(*c*) Turmeric shall be free from lead chromate and other artificial colouring matter.

VINEGAR

Bihar: Vinegar is a liquid derived from alcoholic and acetous fermentation of vegetable juice or infusion.

Malt vinegar is vinegar derived wholly from malted barley or wholly from cereals, the starch of which has been saccharified by the diastase of malt.

Cider vinegar is vinegar made by the alcoholic and acetic fermentation of juice of apples.

Distilled or white vinegar is vinegar prepared by distilling malt vinegar.

Wood vinegar is vinegar prepared by diluting acetic acid and some times colouring the product with caramel.

Artificial vinegar is any vinegar or substitute for vinegar containing or derived from any preparation containing any added acetic acid not wholly the product of alcoholic and acetous fermentations.

PEPSU: Malt vinegar shall be the product derived wholly from malted barley or other cereals which have been saccharified with malt diastase only and contains no mineral acids and no metallic impurities.

Punjab: The same as above.

Travancore – Cochin (Travancore): Vinegar is the liquid derived wholly from alcoholic and acetous fermentation of saccharine liquids.

Malt Vinegar is vinegar derived wholly from malted barley or wholly from cereals, the starch of which has been saccharified by the diastase of malt.

Uttar Pradesh: Vinegar is the liquid derived from alcoholic and acetous fermentation of a vegetable juice or infusion and shall be of the following varieties:—

(*a*) Malt vinegar which is derived wholly from malted barley or cereals the starch of which has been saccharified by the diastases of malt;

(*b*) Cider vinegar which is prepared from the juice of apples by alcoholic and acetous fermentation.

(*c*) Distilled or white vinegar which is the vinegar prepared by distilling malt vinegar.

(*d*) Wood vinegar which is prepared by diluting acetic acid with or without the addition of caramel.

(*e*) Artificial vinegar which is a substitute for vinegar and may be derived from any preparation containing acetic acid not wholly the product of alcoholic and acetous fermentations.

N. B.—The **Central Committee for Food Standards,** Government of India, at its 2nd meeting held in 1944, recommended the following definition for vinegar.

Vinegar is a liquid derived from alcoholic and acetous fermentation of a vegetable juice or infusion.

(*a*) Malt vinegar, which is vinegar derived wholly from malted barley or wholly from cereals, the starch of which has been saccharified by the diastase of malt;

(*b*) Cider vinegar, which is vinegar made by the alcoholic and acetic fermentation of the juice of apples;

(*c*) 'Distilled' or "White vinegar", which is vinegar prepared by distilling malt vinegar;

(*d*) 'Wood vinegar', which is vinegar prepared by diluting acetic acid and sometimes colouring the product with caramel;

(*e*) "Artificial vinegar", which is any vinegar or substitute for vinegar containing, or derived from any preparation containing any added acetic acid not wholly the product of alcoholic and acetous fermentations.

REMARKS

The definitions given for five kinds of vinegar by Bihar and Uttar Pradesh are in conformity with those recommended by the Central Committee for Food Standards in 1944. PEPSU and Punjab have defined malt vinegar only, while Travancore has, in addition, given definition for vinegar derived from alcoholic and acetous fermentation of saccharine fluids.

CHEMICAL STANDARDS FOR VINEGAR *

Sl. No.	Authority	Acetic acid not less than gms./100 c.c.	Total solids not less than W/V. %	Ash not less than	Arsenic not more than	P_2O_5‡ not less than %	Nitrogen‡ not less than %
1	Assam	—	—	—	—	—	—
2	Bengal	—	—	—	—	—	—
3	Bihar (*a*)	4·0	1·5	0·18%	1·5 P.P.M.	0·05	0·04
4	Bombay (*b*)	4·0	—	—	0·0143 mg. per 100 c.c	—	—
5	Coorg	—	—	—	—	—	—
6	Hyderabad	—	—	—	—	—	—
7	Madhya Bharat (Indore)	—	—	—	—	—	—
8	Madhya Pradesh	—	—	—	—	—	—
9	Madras	—	—	—	—	—	—
10	Mysore	—	—	—	—	—	—
11	Orissa	—	—	—	—	—	—
12	PEPSU (*c*)	4·0	2·0	0·2 gms. per 100 c.c.	—	0·5 gms. per 100 c.c.	—
13	Punjab (*d*)	4·0	2·0	0·2 gms. per 100 c.c.	—	0·05 gms. per 100 c.c.	—
14	Rajasthan { Jaipur	—	—	—	—	—	—
	{ Marwar	—	—	—	—	—	—
15	Travancore-Cochin { Cochin	—	—	—	—	—	—
	{ Travancore	4–6	—	—	—	—	—
16	Uttar Pradesh	4·0	1·5	0·18%	1·5 P.P.M.	0·05%	0·04

* The **Central Committee for Food Standards,** Government of India, at its 2nd meeting held in 1944, recommended the following standards for vinegar.

‡ Applicable for malt vinegar only.

1. Vinegar shall contain at least 4 grammes of acetic acid per 100 millilitres.

2. It must contain at least 1·5 W/V per cent of total solids and 0·18 per cent of ash.

3. It shall not contain sulphuric acid or any other mineral acids, lead or copper.

4. It shall not contain arsenic in amounts exceeding 1·5 parts per million parts of vinegar.

5. It shall not contain any foreign substance or colouring matter except caramel.

6. Malt Vinegar, in addition, should have at least 0·05 per cent of phosphorus pentoxide (P_2O_5) and 0·04 per cent of nitrogen.

(*a*) It shall not contain sulphuric acid or any other mineral acids, lead or copper. It shall not contain any foreign substances or colouring matter except caramel.

(*b*) Vinegar shall not contain any sulphuric or other mineral acids, lead, copper. or any foreign substance, or colouring matter except caramel.

(*c*) It shall contain no mineral acids and no metallic impurities.

(*d*) Vinegar shall not contain (1) sulphuric acid, or any other mineral acid lead or copper and (2) any foreign substance or colouring matter except caramel.

WALNUTS AND ALMONDS

Army Service Corps (Govt. of India): (*a*) The Walnuts/Almonds with shell shall be of the current season's crop, dried, clean and free from infestation and admixture.

(*b*) The kernels of Walnuts/Almonds shall have characteristic taste and pleasant smell.

(*c*) The shells shall be whole and unbroken.

WHEAT FLOUR

ATTA

Assam: *Atta* shall be the coarse product obtained by milling and sieving wheat.

Bengal: *Atta* is the coarse product obtained by milling and sieving wheat.

Bombay: "Wheat flour" (*atta*) means the coarse product obtained by milling or grinding and sifting wheat. It shall not contain alum.

Madhya Bharat (Indore): Wheat flour (*atta*) is the coarse product obtained by milling and sieving wheat. *Atta* shall be derived exclusively from wheat and shall not contain barley flour or any other kind of flour.

PEPSU: *Atta* shall be the coarse product obtained by milling and sieving wheat.

Punjab: The same as above.

Rajasthan (Jaipur): The same as above.

(Marwar): The same as above.

Travancore-Cochin (Travancore): *Atta* is the product obtained by milling or grinding and sifting wheat.

Uttar Pradesh: Wheat flour (*atta*) is the coarse product obtained by milling wheat and/or sieving.

Agmark (Govt. of India): Special Agmark *atta* (Roller-milled or stone ground from washed and conditioned wheat) shall be the coarse ground product of sound, well-cleaned wheat and shall be of good keeping quality free from taint or objectionable flavour and impurities.

In Agmark *atta* (Roller-milled), the coarser particles of bran up to 5 per cent of the total product may be removed by sieving but no bran shall be added.

Army Service Corps (Govt. of India): *Atta* shall be prepared from wheat which conforms to A.S.C. Specification No. 224 (New Series) or from imported wheat and which is acceptable to the milling agents. The wheat shall be effectively cleaned prior to milling and the *atta* shall be produced by the roller mill process.

The *atta* shall be of characteristic taste and smell, and in all respect fit for human consumption, and shall be free from insect infestation, fungus infection, dirt and other impurities.

N.B. The **Food Adulteration Committee (1937)**, Government of India, recommended the following definition of *Atta* (wheat flour): "*Atta* is the course product obtained by milling or grinding wheat and sieving it". This definition was accepted by the **Central Committee for Food Standards**, Government of India, at its 1st meeting held in 1944.

CHEMICAL STANDARDS FOR *ATTA**

Sl. No.	Authority	Moisture not more than %	Crude fibre not more than %	Gluten not less than %	Ash on dry basis not more than %	Protein not less than %	Acidity not more than %
1	Assam (*a*)	—	—	8·0	2·3	—	—
2	Bengal	—	—	—	2·5	—	—
3	Bihar	—	—	—	—	—	—
4	Bombay	—	3·0	8·0	2·5	—	—
5	Coorg	—	—	—	—	—	—
6	Hyderabad	—	—	—	—	—	—
7	Madhya Bharat (Indore)	—	—	8·0	2·5	—	—
8	Madhya Pradesh	—	3·0	8·0	2·75	—	—
9	Madras	—	—	—	—	—	—
10	Mysore	—	—	—	—	—	—
11	Orissa (*b*)	—	—	8·0	2·5	—	—
12	PEPSU	13·0	—	8·0	2·0	8·0	—
13	Punjab	13·0	—	8·0	2·5	8·0	—
14	Rajasthan { Jaipur	13·0	—	8·0	2·0	8·0	—
	Rajasthan { Marwar	13·0	—	8·0	2·5	8·0	—
15	Travancore-Cochin { Cochin	—	—	—	—	—	—
	Travancore-Cochin { Travancore	—	—	—	—	—	—
16	Uttar Pradesh	—	—	8·0	2·75	—	—
17	Govt. of India						
	(i) *Agmark*						
	Special Agmark	—	—	—	1·25–2·0	—	—
	Agmark	—	—	—	1·25–2·0	—	—
	Agmark-*Chakki*	—	1·5–2·5	—	1·75–2·30	—	—
	(ii) Army Service Corps (*c*)	12·0	—	8·0	—	—	0·35

* The **Food Adulteration Committee (1937)**, Government of India, recommended the following chemical standards for *atta:* Ash, not more than 2·75% and gluten, not less than 8·0%.

(*a*) Foreign starch shall not be present.

(*b*) There should be no starch grain other than wheat under the microscope.

(*c*) When *atta* is produced simultaneously with flour and bran the divide will

range between *atta* 70 to 55%, bran 10% to 15% and flour 20% to 30%. When *atta* and bran only are produced, a straight run *atta* between 90–95% extraction may be produced.

The *atta* shall be dressed through a cover of not less than 32 meshes per linear inch. In the case of *atta* milled from imported wheat the moisture content shall be not more than 13%.

MAIDA

Assam: Wheat flour (*maida*) shall be the fine, clean sound product made by milling wheat and bolting or dressing the resulting wheat meal.

Bengal: Wheat flour (*maida*) is the fine clean sound product made by milling wheat and bolting or dressing the resulting wheat meal. It shall not contain any substance which is not derived exclusively from wheat.

Bombay: "Wheat flour" (*maida*) means the clean white product obtained from milling or grinding wheat and bolting or dressing the resultant wheat meal. It shall not contain alum.

Madhya Bharat (Indore): Wheat flour (*maida*) is the fine, clean sound product made by milling and bolting or dressing the resulting wheat meal.

Travancore–Cochin (Travancore): Wheat flour is the product obtained by milling or grinding and sifting wheat. *Maida* is the clean white product obtained from milling or grinding wheat and bolting or dressing the resultant white meal.

Uttar Pradesh: Fine wheat flour (*maida*) is made by milling wheat and bolting or dressing the resulting wheat meal.

Army Service Corps (Govt. of India): Flour shall be prepared from wheat which conforms to A.S.C. Specification No. 224 (New Series) or imported wheat and which is acceptable to the milling agents. The wheat shall be effectively cleaned prior to milling and milled by the roller mill process. The flour shall not be artificially bleached.

The flour shall be of characteristic taste and smell and in all respects fit for human consumption, and shall be free from insect infestation, fungus infection, dirt and other impurities.

N.B. The **Food Adulteration Committee (1937)** Government of India, recommended the following definition of *maida*: "*Maida* is the fine product made by milling or grinding wheat and bolting or dressing the resulting wheat meal". This definition was accepted by the **Central Committee for Food Standards**, Government of India, at its first meeting held in 1944.

CHEMICAL STANDARDS FOR *MAIDA*

Sl. No.	Authority	Moisture not more than %	Gluten not less than %	Ash on dry basis not more than %	Acidity not more than %
1	Assam	—	8·0	1·0	—
2	Bengal	—	—	1·0	—
3	Bihar	—	—	—	—
4	Bombay	—	8·0	1·0	—
5	Coorg	—	—	—	—
6	Hyderabad	—	—	—	—
7	Madhya Bharat (Indore)	—	—	1·0	—
8	Madhya Pradesh	—	8·0	1·0	—
9	Madras	—	—	—	—
10	Mysore	—	—	—	—
11	Orissa	—	—	1·0	—
12	PEPSU	—	—	—	—
13	Punjab	—	—	—	—
14	Rajasthan { Jaipur	—	—	—	—
	{ Marwar	—	—	—	—
15	Travancore – { Cochin	—	—	—	—
	Cochin { Travancore	—	—	—	—
16	Uttar Pradesh	—	8·0	1·0	—
17	Govt. of India Army Service Corps (*a*)	12·0	8·0	0·45–0·7 (*b*)	0·35

* The **Food Adulteration Committee** (1937), Government of India, recommended the following chemical standards for *maida*, ash, not more than 1·0%, and gluten, not less than 8·0%.

(*a*) When flour is produced simultaneously with *atta* and bran, the divide will range between flour 20–30%; *atta* 70–55% and bran 10–15%. Granularity percentage dressing though a 10XX silk shall be 100%.

(*b*) Ash in flours up to 20%, 30%, 40%, 70% and 75% extraction shall not exceed 0·45%, 0·5%, 0·55%, 0·6% and 0·7% respectively.

VANASPATI (HYDROGENATED VEGETABLE OIL)

Bihar: Vegetable ghee (Vanaspati) means edible hydrogenated Vegetable oil resembling ghee consisting of refined hydrogenated edible vegetable oil, but which is entirely free from ghee, butter or any product derived from milk or other animal fat.

The article shall be free from all harmful colouring or flavouring matter.

Bombay:* 'Vegetable Product' or 'Vanaspati' means any article of food resembling ghee which consists of refined hydrogenated edible vegetable oil and not more than 10 per cent of milk fat.

Madhya Pradesh:‡ "Edible hydrogenated vegetable oil" (Vanaspati) means and includes any article of food resembling ghee and consisting of refined hydrogenated oils, but which is entirely free from ghee, butter, fat or any product derived from milk or other animal fat.

Travancore-Cochin (Travancore): "Vegetable oil product" or "Vanaspati" means any article of food resembling ghee and consisting of refined hydrogenated edible vegetable oils with or without the addition of innocuous colouring matter, but which is entirely free from ghee or any product derived from milk or other animal fat.

Uttar Pradesh: "Hydrogenated oil" means refined hydrogenated vegetable oil, which is free from ghee, butter-fat or any other product derived from milk or animal fat, and includes any edible product resembling ghee.

Hydrogenated vegetable oil shall not contain any harmful colouring, flavouring or any other matter deleterious to health.

The product on melting shall be clear in appearance and its taste shall be free from staleness or rancidity.

No colouring shall be added to hydrogenated oil unless so authorised by the competent authority, but in no event any colour resembling the colour of ghee shall be added.

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* The question of amending the existing rules under the Bombay Prevention of Adulteration Act as per the V.O.P.C. Order is under the consideration of the State Government. Draft rules in this connection have been published for public opinion in the Bombay Gazette dated January 1953.

‡ At present the V.O.P.C. Order 1947 is in force in this State.

No flavouring substance other than the following may be used for the flavouring of hydrogenated oil either singly or in combination in a total quantity exceeding 25 parts per million: Ethyl butyrate, ethyl caproate, isopropyl butyrate, ethyl caprylate, coumarin, vanillin, benzaldehyde, amyl acetate.

Agmark (Govt. of India): The general characteristics of quality, indicated by all grade designations, shall be that the product:

(*i*) has been prepared by the hydrogenation of refined vegetable oils only, without admixture of animal fats, or other fats of non-vegetable origin,

(*ii*) is palatable, in good condition, clear, and transparent on melting, and free from sediment and rancid flavour,

(*iii*) may be white, yellowish or light green in colour with or without granular structure, and

(*iv*) may contain added flavouring and aromatic substances and vitamins of vegetable origin.

In the case of Vanaspati (groundnut oil), specific characteristic tests for vegetable oils other than groundnut oil shall be negative. Arachidic acid test shall be positive.

In the case of Vanaspati (cottonseed oil), specific characteristic tests for vegetable oils other than cotton seed oil shall be negative.

Army Service Corps: (*i*) The oil hydrogenated shall be prepared from refined oils. It shall be granular and suitably flavoured. The flavour or flavours used shall have prior approval of the Director of Supplies and Transport. No colouring shall be added.

(*ii*) The oil hydrogenated shall be produced from any edible harmless vegetable oils or mixtures thereof. All oils used for hydrogenation shall be approved by the Director of Supplies and Transport.

(*iii*) The oil hydrogenated shall be clean and wholesomes free from mineral, marine and animal oil and in all respect, suitable for human consumption.

(*iv*) When melted the oil hydrogenated shall be clean, clear, free from sediment and rancidity and pleasant to taste and smell.

The warranty period shall be six months.

V.O.P.C. ORDER: Before the V.O.P.C. Order was passed by the Government of India in 1947, some States/Provinces had prescribed standards for Vegetable oil products in their Food Rules. But the Government of India, in order to control effectively the manufacture, stock and sale of Vegetable Oil Products, promulgated the vegetable Oil Products Control Order, 1947. Originally this Order was applicable only to Part A States, but now it is made applicable to the whole of the Indian Union except Jammu and Kashmir. This Order as amended from time to time is given below.

VEGETABLE OIL PRODUCTS CONTROL ORDER, 1947

1. (*i*) This Order may be called the Vegetable Oil Products Control Order, 1947.

(*ii*) It extends to the whole of India except the State of Jammu and Kashmir.

(*iii*) It shall come into force at once.

2. In this Order, unless there is anything repugnant in the subject or context,—

(*a*) "Controller" means the person appointed as the Vegetable Oil Products Controller for India by the Central Government and includes any person authorised by the Controller to exercise all or any of the powers of the Controller under this Order;

(*b*) "dealer" means a person carrying on business in the purchase, sale or distribution of any vegetable oil product;

(*c*) "producer" means a person carrying on the business of manufacturing any vegetable oil product;

(*d*) "recognised dealer" means a dealer recognised as such by the Controller for the porposes of this Order;

(*e*) "Vegetable Oil Product" means any vegetable oil subjected to a process of hydrogenation in any form, or any preparation thereof for cooking purposes containing not less than 50 per cent of hydrogenated vegetable oil.

3. No producer shall, after such date as the Controller may notify in this behalf, dispose of, or agree to dispose of, or in pursuance of any agreement entered into on or before such date make delivery of, any vegetable oil product except—

(*a*) to or through a recognised dealer, or

(*b*) to a person specially authorised in this behalf by the Controller to acquire vegetable oil products on behalf of the Central Government or of a State Government and no person other than a recognised dealer shall, after the date notified by the Controller, carry on business in the purchase, sale or distribution of any vegetable oil product.

4. (1) The Controller may by general or special order prohibit or restrict the manufacture, stock or sale of any variety or quality of vegetable oil product, and no person to whom such order applies shall manufacture, stock or sell any vegetable oil product in contravention thereof.

(2) Every producer shall furnish the Controller with such details regarding:—

(*a*) the quantities and varieties of vegetable oil products manufactured by him; and

(*b*) the ingredients used in their manufacture and the sources from which the ingredients are obtained, as the Controller may require.

5. (1) Every producer and every dealer shall comply with such directions regarding the sales, stocks and distribution of vegetable oil products and the maintenance of records relating to the same as may from time to time be given to him by the Controller.

(2) Every producer and every dealer shall furnish the Controller with such details regarding the quantities and varieties of vegetable oil products produced, stocked or sold by him, during any period as the Controller may require.

6. (1) The Controller may from time to time by notification in the Official Gazette fix, with the prior concurrence of the Central Government, the maximum prices at which vegetable oil products may be sold, and the prices so fixed may be different in different localities and for different classes of transactions.

(2) No person shall buy or sell, or agree to buy or sell any vegetable oil product at a price exceeding the maximum fixed under sub-clause (1).

(3) Where in respect of any vegetable oil product a maximum price has been fixed under sub-clause (1), no such vegetable oil product shall be delivered or accepted, in pursuance of an agreement entered into before such fixing of maximum

price and providing for the payment of a price higher than that maximum unless the agreement is so revised as to substitute for the price originally agreed a price not exceeding the maximum fixed under sub-clause (1).

7. (1) The Controller may time to time—

(*a*) allot, with the prior concurrence of the Central Government, quotas of vegetable oil products for the requirements of any specified State, area or market;

(*b*) issue directions to any producer or dealer to supply vegetable oil products to such State, areas or markets, in such quantities of such types or varieties, at such times, at such prices, and in such manner, as may be specified in the direction; and

(*c*) require any producer or recognised dealer to keep in reserve stocks of vegetable oil products in such quantities and of such types and varieties as he may direct from time to time.

(2) Every producer and every dealer shall, notwithstanding any pre-existing agreement, give priority to, and comply with, the directions issued to him under sub-clause (1).

8. (1) No vegetable oil product shall, after such date as the Controller may notify in this behalf, be offered by any person for transport, whether by land or water or accepted by any railway administration or other carrier for transport except under and in accordance with the conditions of a permit issued by the Controller in that behalf; Provided that the above restriction shall not apply to the transport of any vegetable oil product (*a*) not exceeding 5 seers by a *bona-fide* traveller as part of his personal luggage, or (*b*) under and in accordance with military credit notes, or (*c*) under and in accordance with a permit issued by a State Authority before the date notified by the Controller or (*d*) in accordance with such general permits as may from time time be notified by the Controller.

(2) A permit issued in pursuance of sub-clause (1) shall be returned by the consignor to the Controller, if so required by him on completion of despatch, or on expiry of the period of its validity whichever is earlier, with the particulars of actual despatches noted on it in such form as may be prescribed by the Controller.

8-A.* The Controller may enter upon and inspect and search any premises, vehicles or vessels and seize any stocks of Vegetable Oil Products in respect of which such person or persons has reason to believe that a contravention of any of the provisions of this Order has been or is being or is about to be committed.

9. Any Court trying a contravention of this Order may, without prejudice to any other sentence which it may pass, direct that any stock of vegetable oil product in respect of which it is satisfied that this Order has been contravened, together with the receptacles in which the stock is contained, shall be forfeited to the Government.

10. Notwithstanding the supersession of the Vegetable Oil Products Control Order, 1946, all notifications, orders and directions issued thereunder shall so far as they are not incosistent with this order, be deemed to have been made hereunder and they shall continue in force until rescinded or modified hereunder.

11. Any law in force in any part B State except the State of Jammu and Kashmir, corresponding to this Order, by whatever name called, is hereby repealed.

12. All Notifications, directions and orders issued under this Order which immediately before the 25th of November, 1950 were in force in certain parts of India are hereby extended to and shall be in force in the rest of India except the State of Jammu and Kashmir.

13. The Controller may enter and inspect any place where Vegetable Oil Products are manufactured, stored or exposed for sale, and take samples of such articles for examination.

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*In exercise of the powers conferred by clause 2 (*a*) of the Vegetable Oil Products Control Order, 1947 as amended by the Notification of the Government of India in the Ministry of Agriculture No. 2 VP (2)/48, dated the 9th October 1948, the Vegetable Oil Products Controller for India has authorised that the power of the Controller under section 8-A of the said Order shall be exercisable also by any State Government or any officer specified by State Government in this behalf with the prior concurrence of Vegetable Oil Products Controller for India or any District Magistrate or Deputy Commissioner and any police officer not below the rank of sub-inspector.

*RULES REGARDING THE MANUFACTURE, STOCK OR SALE OF VEGETABLE OIL PRODUCTS**

In exercise of the powers conferred by sub-clause (1) of clause 4 of the Vegetable Oil Products Control Order, 1947, as continued in force by sub-section (2) of Section 17 of the Essential supplies (Temporary Powers) Act, 1946 (XXIV of 1946), and in supersession of the Notification of the Government of India in the Department of Food No. 5-VP (1)/47, dated the 31st January 1947, the Vegetable Oil Products Controller for India hereby prohibits the manufacture, stock or sale of any vegetable oil product, which does not conform to the following provisions, namely:—

1. It shall be prepared by hydrogenation from any edible harmless vegetable oils (*a*) or mixtures thereof except marine, mineral and animal oils. The prior approval of the Vegetable Oil Products Controller for India shall be obtained for admixtures of more than 5 per cent of any permissible oil in the product and the name of oil so used shall be clearly indicated on the containers.

2. It shall not contain any harmful colouring, flavouring (*b*) or any other matter deleterious to health.

3. No colouring shall be added to it unless with the prior sanction of the Vegetable Oil Products Controller and in no event any colour resembling the colour of ghee.

4. If any flavour is used, it shall be distinct from that of ghee in accordance with a list of permissible flavours and in such quantities as may be prescribed by the Vegetable Oil Products Controller for India.

5. It shall not have moisture exceeding 0·25 per cent.

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* Notification of the Government of India, in the Ministry of Agriculture No. S.R.O. 780 dated 21-10-1950 as amended by Notification No. S.R.O. 2103 dated 9-11-1953.

(*a*) At present, groundnut oil, sesame oil and cottonseed oil are permitted to be used in the manufacture of Vegetable Oil Products (V.O.P.C. New Delhi letter No. 4-VP (2)/54/2705 dated 13th May 1954.)

(*b*) In an earlier Notification No. 5-VP (1)/50 dated 2-8-1950 the following flavouring ingredients were permitted to be used for the flavouring of vegetable oil products, singly or in combination, in a total quantity of not more than 25 p.p.m.—Ethyl butyrate, ethyl caproate, isopropyl butyrate, ethyl caprilate, vanillin, benzaldehyde and amyl acetate.

6. The melting point as estimated by the capillary slip method (as described in Note I below) shall be from 33°C to 37°C both inclusive.

7. The Butyro Refractometer reading at 40°C shall not be less than 48·0.

8. It shall not have unsaponifiable matter exceeding 1·25 per cent.

9. It shall not have free fatty acids (calculated as oleic acid) exceeding 0·25 per cent.

10. The product on melting shall be clean and clear in appearance and shall be free from sediment and rancidity and pleasant to taste and smell.

11. It shall contain raw or refined sesame (*til*) oil not less than 5 per cent by weight but sufficient so that when the vegetable oil product is mixed with refined groundnut oil in the proportion of 20:80, the red colour produced by the Baudouin test (as described in Note II below) shall not be lighter than 2·0 Red units in a 1 c.c. cell on a Lovibond scale.

12. It shall be manufactured in premises maintained under hygienic conditions.

13. All Vegetable Oil Products manufactured on or after the 1st of December, 1953, shall contain not less than 300 I.U. of Synthetic vitamin A per ounce of Vegetable Oil Product.

Note I. The 'Capillary Slip Method' is as follows;— (*i*) Thin walled glass tube open at both ends with an external diameter of 1·2 to 1·5 mm. and internal diameter of 0·83 to 1·1 mm. and length 5 to 6cm. should be used after proper cleaning and drying.

(*ii*) The sample of the vegetable oil product should be completely melted and well mixed at a temperature of about 50°C. The capillary tube should be inserted into the molten product so that a column of the product about one cm. long is forced into it. The sample in the tube should be allowed to just set by keeping the tube in a horizontal position during winter, and during summer the tube may be put on a perforated metal tray which is so placed inside a small water bath containing water at 15°C–17°C that the bottom of the tray just touches the water.

(*iii*) The tube is then placed in a test-tube immersed in water at 15°C–17°C for one hour.

(*iv*) A thermometer (reading in 1/5th of a degree) should be suspended in the centre of a beaker or water at 10°C, (the beaker is to be provided with a side tube heating arrangements) so that the lower end of the sample column is 3 cms. below the surface of water. The side tube of the apparatus should be heated

gently, so that the temperature of water increases slowly at the rate of 2°C per minute till the temperature reaches 25°C and thereafter at the rate of ½ a degree per minute.

(*v*) The temperature of water should be noted when the sample column commences to rise in the tube. This temperature is recorded as the melting point.

The thermometer used in this test should be checked against a standard thermometer calibrated and certified by the National Physics Laboratory, Teddington, England.

Note II. The Baudouin Test shall be carried out as follows:—

Place in a test-tube 5 cc. of the sample (20 parts of vegetable oil products and 80 parts of refined groundnut oil) and 5 cc. of hydrochloric acid (Specific Gravity 1·19) and add to it 8 drops of 2 per cent solution in alcohol of freshly distilled furfurol, shake vigorously for 2 minutes and allow to stand. The acid layer becomes distinctly red. Quickly filter the acid layer through a wet filter paper and examine the filtrate against a Lovibond scale in a 1 cm. cell or against a red colour comparator.

If the vegetable oil product on being shaken with hydrochloric acid alone, conveys a redness to the hydrochloric acid owing to the presence of certain artificial colouring agents, the procedure is as follows:

Shake 10 cc of the melted vegetable oil product in a separating funnel for half a minute with 10 cc. of hydrochloric acid, specific gravity 1·125. Draw off the red acid layer which collects at the bottom of the funnel and repeat the process until no further colouration takes place. During the treatment do not permit the temperature of the contents of the separating funnel to exceed that necessary to keep the sample in liquid condition. After the hydrochloric acid has been completely removed apply the Baudouin test as described above.

CHEMICAL STANDARDS FOR VANASPATI (HYDROGENATED VEGETABLE OIL)

Sl. No.	Authority	Moisture not more than %	Melting point	B. R. Reading at 40°C not less than	Reichert value not more than	Sap. Value	Unsaponifiable matter less than %	Free fatty acids as oleic acid not more than %	Refined sesame oil not less than %	Diacetyl not more than p.p.m.
1	Assam	—	—	—	—	—	—	—	—	—
2	Bengal	—	—	—	—	—	—	—	—	—
3	Bihar	—	31°–37°C (*a*)	48	1·0–1·5	—	1·5	0·25	5 (*b*)	6
4	Bombay	—	—	—	—	—	—	0·25	—	—
5	Coorg	—	—	—	—	—	—	—	—	—
6	Hyderabad	—	—	—	—	—	—	—	—	—
7	Madhya Bharat (Indore)	—	—	—	—	—	—	—	—	—
8	Madhya Pradesh	—	—	—	—	—	—	0·25	—	—
9	Madras	—	—	—	—	—	—	—	—	—
10	Mysore	—	—	—	—	—	—	—	—	—
11	Orissa	—	—	—	—	—	—	—	—	—
12	PEPSU	—	—	—	—	—	—	—	—	—
13	Punjab	—	—	—	—	—	—	—	—	—
14	Rajasthan { Jaipur / Marwar	—	—	—	—	—	—	—	—	—
15	Travancore-Cochin { Cochin / Travancore	— 0·25	— 31°–37°C (*a*)	—	—	—	— 1·5	— 0·25	—	— 6

16	Uttar Pradesh	0·25	33°–37°C (*a*)	48	—	—	1·5	0·25	5	6
17	Government of India (A) *Agmark:*									
	(i) Vanaspati – (Groundnut oil) White label (*c*)	0·15	—	48	1·6	188–195	1·0	0·2	—	—
	(ii) Vanaspati – (Cottonseed oil) Yellow label (*d*)	0·15	—	50	1·6	190–194	1·0	0·2	—	—
	(iii) Vanaspati – (Mixed edible oils) Green label	0·15	—	—	—	—	2·5	0·25	—	—
	(B) Army Service Corps	0·25	37±2°C	48	—	—	1·25	0·25	5 (*e*)	—
	(C) V.O.P.C. Order	0·25	33°–37°C	48	—	—	1·25	0·25	5%	—

(*a*) The Rules provide a tolerance of 2°C on either side.

(*b*) When the vegetable oil product is mixed with refined groundnut oil in the proportion of 20:80 the red colour produced by Baudouin test shall not be lighter than 2·0 units in 1cm cell of Lovibond scale.

(*c*) Specific characteristic tests for vegetable oils other than groundnut oil shall be negative. Arachadic acid test shall be positive.

(*d*) Specific characteristic tests for vegetable oils other than cottonseed oil shall be negative.

(*e*) Unhydrogenated, raw or refined sesame (*til*) oil sufficient to respond to Baudouin test.

COLOURS, FLAVOURS AND PRESERVATIVES

Several States *viz.*, Assam, Bombay, Hyderabad, Madhya Pradesh, Mysore, Orissa and Travancore-Cochin (Travancore) have provided in their respective Food Adulteration Acts that no person shall mix colour, stain or any ingredient to any article of food so as to render it injurious to health. Other States have made provisions in their Acts for framing Rules in this regard. All the States except PEPSU and Punjab have specified in the case of only a few commodities whether or not either colour or flavours or preservatives should be added to them. Information regarding the use of colours, flavours, preservatives and other ingredients in foodstuffs for each State is given in following paragraphs.

Assam: *Butter* shall be made with or without salt, or other preservative, and with or without the addition of colouring matter.

Bengal: *Butter* shall be made with or without salt, or other preservative, and with or without the addition of colouring matter, such preservative or colouring matter being of such a nature and such quantity as not to render the article injurious to health.

Bihar: *Butter* is the butter made with or without the addition of salt or other preservative and of innocuous colouring matter.

Coffee sold or prepared for sale as green, raw or unroasted coffee shall be free from any artificial colouring matter.

Ghee: On melting, cow and buffalo ghee shall be clear in appearance, free from extraneous matter including colour, preservatives, flavouring agents, etc.

Vegetable ghee shall be free from all harmful colouring matter.

Turmeric shall be free from all harmful colouring and other extraneous matter.

Wood vinegar shall not contain any foreign substance or colouring matter except caramel.

Bombay: *Sweet aerated water* may contain saccharin in proportion not exceeding 143 parts per million or half a grain per 8 ounces.

Ice cream shall not contain saccharin subject to labelling rules being complied with.

Saffron shall not contain any foreign colouring matter.

Turmeric shall not contain lead chromate or other artificial colouring matter.

Vinegar shall not contain colouring matter except caramel.

"*Preservative*" means any substance which is capable of inhibiting, retarding or arresting the process of fermentation, acidification, or other decomposition of food or masking any of the evidences of putrefaction; but does not include common salt (sodium chloride), saltpetre (sodium or potassium nitrate), sugars, lactic acid, acetic acid or vinegar, glycerine, alcohol or potable spirits, herbs, hop extract, spices and essential oils used for flavouring purposes or any substance added to food by the process of curing known as smoking.

Percentages and quantities of sulphites and benzoates shall be calculated as sulphur dioxide (SO_2) and benzoic acid (C_6H_5 COOH) respectively.

The articles of food listed in the table below may contain preservatives of the nature and in the proportion specified, against each.

The articles of food mentioned in the first column *may contain the preservative specified in the second column in proportions not exceeding the number of parts, (estimated by weight) per million, specified in the third column.*

PRESERVATIVES

S.I No.	FOOD	Preservative	Parts per million
1	Sausages and sausage containing raw meat, cereals and condiments.	Sulphur Dioxide	450
2	Fruit and fruit pulp (not dried), for conversion into jam or crystallized glace or cured fruit as defined in items 6 and 8—		
	(*a*) Cherries	,,	3,000
	(*b*) Strawberries and Raspberries	,,	2,000
	(*c*) Other fruits	,,	1,500
3	Dried Fruits—		
	(*a*) Apricots, peaches, nectarines, apples and pears.	,,	2,000
	(*b*) Raisins and sultanas	,,	450

Preservatives (*Continued*)

Sl. No.	FOOD	Preservative	parts per million
4	Unfermented grape juice and non-alcoholic wine made from such grape juice if labelled in accordance with labelling rules.	Benzoic Acid	2,000
5	Other non-alcoholic wines; cordials and fruit juices, sweetened or unsweetened	Either Sulphur Dioxide or	350
		Benzoic Acid	1,000
6	Jam (including marmalade and fruit jelly prepared in the way in which jam is prepared).	Sulphur Dioxide	40
7	Crystallized glace or cured fruit (including candied peel).	,,	100
8	Fruit and fruit pulp not otherwise specified in this list.	,,	350
9	Sugar (including solid glucose) and cane syrups.	,,	70
10	Cornflour (maize starch) and other prepared starches.	,,	100
11	Corn syrup (liquid glucose)	,,	450
12	Gelatine	,,	1 000
13	Beer	,,	70
14	Cider	,,	200
15	Alcoholic wines	,,	450
16	Sweetened mineral waters	Either Sulphur Dioxide or	70
		Benzoic Acid	120
17	Brewed ginger beer	Benzoic Acid	120
18	Coffee extract	,,	450
19	Pickles and sauces made from fruits or vegetables.	,,	250

COLOURS

Colouring matters which may not be added to articles of food are listed below

1. *Metallic Colouring Matters*—

Compounds of any of the following metals:—Antimony, Arsenic, Cadmium, Chromium, Copper, Mercury, Lead, and Zinc.

2. *Vegetable Colouring Matter*—Gamboge.

3. *Coal Tar Colour—*

Colour Index* No.	Name	Synonyms
7	Picric Acid	Carbazotic Acid.
8	Victoria Yellow	Saffron Substitute; Dinitrocresol.
9	Manchester Yellow	Naphthol Yellow, Martius Yellow.
12	Aurantia	Imperial Yellow.
724	Aurine	Rosolic Acid, Yellow coralline.

Coorg: *Butter* shall be made with or without the addition of salt or other innocuous preservative or of innocuous colouring matter.

Coffee shall be free from artificial colouring matter.

Madhya Bharat (Indore): *Butter* may be made with or without salt or other preservative and without the addition of colouring matter.

Madhya Pradesh: *Butter* may be prepared with or without the addition of innocuous colouring material.

Coffee, green, raw or roasted, shall be free from any artificial colouring matter and from any coating, facing or glazing substance.

Madras: *Butter* and *cream* may be made with or without the addition of innocuous preservative or of innocuous colouring matter.

Cheese may be made with or without the addition of salt or other innocuous preservative or of innocuous colouring matter.

Coffee green, raw, or unroasted coffee, shall be free from any artificial colouring matter, and from any coating, facing or glazing substance.

Grains, dhal and flours: No person shall add any artificial colouring matter to the following articles, whether the articles be in the form of whole grain or *dhal* or flour.

(1) Bengal gram (*Cicer arietinum*), (2) Red gram (*Cajanus Indicus*), (3) Lentil (*Lens esculenta*) and (4) Peas (*Pisum sativum*).

Vegetable oils: No person shall add any artificial colouring matter to any fat or oil intended for sale, including hydrogenated vegetable products, but excluding butter.

* Index Numbers given by the Society of Dyers and Colourists (1924)

Turmeric shall be free from lead chromate and other artificial colouring matter.

Mysore: *Butter* may be made with or without salt or of innocuous colouring matter.

Orissa: *Butter* may be made with or without the addition of salt or other innocuous preservative or of innocuous colouring matter.

Cheese may be made with or without the additon of salt or other innocuous preservative or innocuous colouring matter.

The saccharine as an adulterant is prohibited.

Preservative has been defined in the same way as in Bombay.

"Sulphur dioxide" includes sulphites, and benzoic acid includes benzoates.

"Thickening substance" means sucrate of lime, gelatine, starch, paste or any other substance which when added to cream is capable of increasing its viscosity, but does not include cane or beet sugar;

Percentages shall be calculated by weight.

Sulphites shall be calculated as sulphur dioxide (SO_2) and benzoates as benzoic acid (C_6H_5 COOH)

Articles of food which may contain preservatives and the proportion thereof in each case are the same as those in Bombay (*vide* pp. 129–30) except in the case of corn flour.

Colouring matters *which may not be added to articles of food* are the same as those given in Bombay (*vide* pp. 130–31).

COLOURING MATTERS WHICH MAY BE ADDED TO ARTICLES OF FOOD

Red shades	80*	Ponceau 3–R
	184	Amaranth
	773	Erythrosine
Orange shades	150	Orange I
Yellow shades	10	Napthol yellow S
	640	Tartrazine
	22	Yellow AB
	61	Yellow OB
Green shades	666	Guinea green B
	670	Light green, S. F., yellowish Fast Green, FCF. (hydroxy derivative of the sodium salt of alphazurine FG, CI671)
Blue Shades	1180	Indigo disulpho acid

* These numbers preceding the names of colours refer to the numbers of colours as listed in the Colour Index published in 1924 by the Society of Dyers and Colourists of Great Britain.)

PEPSU: Rules will be framed as suggested by experience.

Punjab: *Saccharine* shall not be used in ice cream and ice candies in quantities more than 6·6 grains per gallon of milk or liquid, as the case may be.

Travancore-Cochin (Cochin): *Butter* shall be made with or without the addition of salt or other innocuous colouring matter.

(Travancore): *Butter* shall be made with or without the addition of common salt or of the colouring matter "annato." In the case of butter made exclusively from cow's milk, no sample shall be presumed to be genuine if it contains any added colouring matter.

Ghee on melting shall be clear in appearance, free from extraneous matter including colouring, preservatives and flavouring agents.

No person shall add any colouring matter to milk intended for sale.

Vegetable oil product may contain diacetyl, if any, not in excess of six parts per million.

Uttar Pradesh: *Aerated water* may be made with or without the addition of the prescribed colouring or flavouring substance.

Coffee shall be free from any artificial colouring matter and from any coating, facing or glazing substance.

Confectionery may be made with or without the addition of permissible colouring or flavouring substance.

Fruit juice may contain sulphur dioxide or sulphites calculated as sulphur dioxide in proportion not exceeding 2 grains to the pint or sodium benzoate in proportion not exceeding 8 grains to the pint may be added as preservative in fruit juices.

Fruit syrup shall not contain any flavouring substances other than those naturally present in the fruit or fruits from which it has been prepared or orange oil may be added to orange syrup. Prescribed colouring substances may be added provided such additions are duly declared on the label.

Ghee: No colouring matter or preservative shall be added to ghee.

Ginger: presence of sulphur dioxide to the extent of 2000-4000 parts per million is permissible for its preservation.

Honey shall not contain any added artificial sweetening substance.

Ice-candy may be made with or without the addition of prescribed colouring or flavouring substance.

Ice-cream may be made with or without the addition of the prescribed colouring or flavouring substance.

Hydrogenated vegetable oil shall not contain any harmful colouring, flavouring or any matter deleterious to health. It shall not contain diacetyl, if any, exceeding six parts per million.

No colouring matter shall be added to hydrogenated oil unless authorized by competent authority, but in no event any colour resembling the colour of ghee shall be added.

No flavouring substance other than the following may be used for flavouring of hydrogenated oil either singly or in combination in a total quantity exceeding 25 parts per million. (1) Ethyl butyrate, (2) Ethyl caproate, (3) Isopropyl butyrate, (4) Ethyl caprylate, (5) Coumarine, (6) Vanillin, (7) Benzaldehyde, (8) Amyl acetate.

Turmeric shall be free from lead chromate or artificial colouring matter and it shall not contain more than 5 parts per million of lead.

Wood vinegar may be prepared with or without the addition of caramel.

No person shall sell, offer for sale or expose for sale (*a*) any article of food to which has been added preservative substance, the addition of which is not specifically permitted, (*b*) any article of food containing any preservative in excess of the quantity permitted, and (*c*) in one package any article of food containing more than one kind of preservative.

No person shall sell or offer or expose for sale any food containing any colouring, flavouring matter or preservative or any other chemical substances, such as saccharin, saxin, dulcin, glucin or other synthetic sweetening matter or any mineral oil, mineral fat or mineral salt (except sodium chloride) or paraffin or resin, unless the addition or presence of any such substance to that food is specifically permitted.

Provided that saccharin may be added to any food if the containers of such food are labelled with an adhesives declaratory label.

(*a*) **"Preservative"** shall mean any substance which when added to food is capable of inhibiting, retarding or arresting the process of fermentation, acidification or other decomposition of food or of making any evidence of putrefaction, but does not include common salt (sodium chloride), saltpetre (potassium nitrate), sugar, lactic acid, acetic acid or vinegar, glycerine, alcohol or potable spirits, herbs, hop extract, spices and essential oils used for flavouring purposes of any substance added to food by process of curing known as smoking.

(*b*) "Thickening substance" shall mean sucrate of lime, gelatine, starch, paste or any other substance which when added to cream is capable of increasing its viscocity, but does not include benzoates.

(*c*) "Sulphur dioxide", shall include sulphites, and "benzoic acid" shall include benzoates.

The articles of food which may contain preservatives and nature and proportion of preservatives in each case are the same as those prescribed in Bombay (*vide* pp. 129–30) except in the case of corn flour. Indian ginger intended for export may contain sulphur dioxide to an extent of 2000–4000 parts per million.

Synthetic Colouring matters: No synthetic organic colour except the following shall be used in the preparation of ice-creams, fruit jellies, sweets and beverages of all kinds.

671*	Brilliant blue F.C.F.	773	Erythrosine.
1180	Indigotine.		Ponceau Sx.
666	Guinea green B		Oil red Xo.
670	Light green S.F. Yellowish.		Naphthol–Yellow S.
	Fast green F.C.F.	10	Naphthol Yellow S.
150	Orange I	22	Yellow AB.
	Orange SS.	61	Yellow OB.
80	Ponceau 3.R.	640	Tartrazine.
184	Amaranth.		Sunset yellow F.C.F.

The colours specified above when used in the articles of food mentioned therein shall not contain any impurities in excess of the limits laid down below:

	Not more than
(*i*) Water insoluble matter	9·5 per cent.
(*ii*) Combined ether extract	0·4 per cent.
(*iii*) Mixed oxides	1·0 per cent.

* These numbers refer to the number of the colours as listed in the Colour Index published in 1924 by the Society of Dyers and Colourists of Great Britain.

(*iv*) Subsidiary dyes	Not more than 5·0 per cent.
(*v*) Arsenic (calculated as As_2O_3)	4 parts per million.
(*vi*) Lead	10 parts per million.
(*vii*) Other heavy minerals	100 parts per millions.

The maximum limit of permissible colour which may be added to any food shall be one grain per pound of food.

In addition to the afore said colouring matters, such natural colouring matter or pigments which occur in edible fruits or vegetables may be added to any foods.

Inorganic colouring matters and pigments shall not be added to any article of food.

The use of artificial or synthetic colouring matters in raw foodstuffs which are consumed after cooking in the usual way, is prohibited.

Agmark (Govt. of India): *Butter* may be made with or without the addition of clean dry salt (not exceeding 2 per cent). Butter shall contain no preservative.

Ghee shall be free from foreign colouring matter.

Mustard oil shall be free from added flavouring and colouring substances.

Army Service Corps (Govt. of India): *Butter* shall be free from adulteration with foreign fats, or oils, or other substances like filling materials, harmful colouring matter, or preservative other than common salt.

Milk tinned, condensed and sweetened shall not contain any preservative other than sucrose. It shall not contain any added colouring matter, chemicals or any injurious substance.

V.O.P.C. Order: Hydrogenated oil (Vanaspati) shall not contain any harmful colouring, flavouring or other matter deletarious to health. No colouring shall be added unless with the prior sanction of the Vegetable Oil Products Controller and in no event any colour resembling the colour of ghee.

If any flavour is used it shall be distinct from that of ghee. The following flavouring ingredients may be added singly or in

combination in a total quantity of not more than 25 p.p.m.: Ethyl butyrate, ethyl caproate, ethyl caprilate, isopropyl butyrate, vanillin, benzaldehyde, and amyl acetate.

Further, all vegetable oil products manufactured on or after the 1st December 1953 shall contain not less than *300 I. U. of synthetic vitamin A* per oz. of vegetable oil product.

N.B. The **Central Committee for Food Standards** at their 5th Meeting held in 1950 recommended that:

(1) Incorporation of inorganic colouring matters and pigments in all foods should be completely banned.

(2) Incorporation of such vegetable colouring matter or pigments only as occur in nature either in edible fruits or vegetables should be permitted in all food articles used for human consumption.

(3) A ban should also be imposed on the use of artificial or synthetic colouring matters in raw foodstuffs which are taken after cooking in the usual way.

(4) The use of synthetic organic colours from a prescribed list may be permitted in a few foods such as ice-cream, fruit jellies, sweets and beverages of all kinds.

(5)* The following synthetic colouring substances may be included, for the time being, in the list of synthetic dyes. They were adopted from the existing food laws of the U.S.A.

Brilliant Blue FCF	Erythrosine
Indigotine	Ponceau SX
Guinea Green B	Oil Red XO
Light Green SF Yellowish	Naphthol yellow S
Fast Green FCF	Naphthol Yellow S Potassium Salt
Orange I	Yellow AB
Orange SS	Yellow OB
Ponceau 3R	Tartrazine
Amaranth	Sunset Yellow FCF

(6) The dyes from the above list when used in foodstuffs should be absolutely pure and free from any harmful impurities.

(7) The maximum limit permissible for each of the dyes should be fixed at one grain for each pound of food.

(8) The above list of colours should not be considered as final. Investigations on the effects of these and other dyes should be carried out with different types of Indian diets. The list could then be modified in the light of the experience gained.

(9) There should be an active organization to see that the recommendations made above are enforced.

* The Committee at its 8th Meeting held recently in February 1954 recommended that for the present only five synthetic organic colours *viz.* Indigotine, Orange I, Amaranth, Erythrosine and tartrazine, be approved as permissible food colours.

LABELLING OF FOODSTUFFS

In this section, rules relating to labelling of foodstuffs sold or offered for sale to the public, as are enforced by State Governments, the A.S.C. and Agmark Authorities, are collected and presented under each State. The main aim of these rules is that the public should know what they are buying. Improper or fraudulent practice in this connection has been made a punishable offence in all cases. In the case of the foodstuffs to to be purchased by the Defence Forces, separate rules have been laid down for packaging and labelling for each commodity. Since only the foodstuffs conforming to the specifications prescribed by the A.S.C. are bought by the Army Authorities, no penal clause has been attached to the rules.

Assam: No person shall give with any food sold by him a label, whether attached to or printed on the wrapper or container, which falsely describes that food, or is otherwise calculated to mislead as to its nature, substance or quality.

No person, directly or indirectly, by himself or by any other person on his behalf, shall sell, expose for sale or hawk any tin or other receptacle containing condensed milk which has been separated or skimmed, unless it is clearly indicated in printed letters, both in English and the vernacular of the locality, on the outside of the tin or receptacle, that the milk has been separated or skimmed, and is not suitable for feeding infants under one year of age.

No person directly or indirectly, by himself or by any other person on his behalf, shall sell, expose for sale or hawk any article of food resembling butter or ghee unless it is packed exclusively in sealed tins or packages each conspicuously labelled or durably marked at least on two opposite sides with the descriptive words "Vegetable Product", "Margarine", or "Animal Fat" as the case may be, in printed capital letters not less than half an inch high, or is contained exclusively in open tins or other containers labelled or durably marked as aforesaid.

Bengal: The containers of "Condensed Milk" shall be of the following standard sizes:—

(1) *For full cream sweetened condensed milk*:— Containers shall contain a net weight of 14 oz., 7 oz., and $2\frac{3}{4}$ oz. and $\frac{1}{2}$ gallons.

(2) *For full cream unsweetened condensed milk*:—Containers shall contain a net weight of 16 oz., 12 oz., 6 oz., and ½ gallons.

Every container of "Condensed Milk" or "Desiccated Milk" or "Sterilized Milk" shall bear a label upon which is printed such one of the following declarations as may be applicable:—

In the case of condensed full cream milk, unsweetened—

Condensed Full Cream Milk, Unsweetened
This tin contains the equivalent of
(*a*) Pint of Milk
Made in....* Free from harmful bacteria

In the case of condensed full cream milk, sweetened—

Condensed Full Cream Milk, Sweetened
This tin contains the equivalent of
(*a*) Pint of Milk, with sugar added
Made in....* Free from harmful bacteria

In the case of condensed skimmed milk, unsweetened—

Condensed Machine-Skimmed Milk or Condensed Skimmed Milk, Unsweetened

UNFIT FOR BABIES
(to be mentioned in Bengali also)

This tin contains the equivalent of
(*a*) Pints of skimmed milk
Made in....* Free from harmful bacteria

In the case of condensed skimmed milk, sweetened—

Condensed Machine-Skimmed Milk or Condensed Skimmed Milk, Sweetened

UNFIT FOR BABIES
(to be mentioned in Bengali also)

This tin contains the equivalent of
(*a*) Pints of skimmed milk, with sugar added
Made in....* Free from harmful bacteria

* The country of origin should be given here in English and in Vernacular of the Province.

In the case of dried full cream milk—

Dried Full Cream Milk
This tin contains the equivalent of
(*a*) Pints of milk
Made in....* Free from harmful bacteria

In the case of dried skimmed milk—

Dried Machine-Skimmed Milk or Dried Skimmed Milk

UNFIT FOR BABIES
(to be mentioned in Bengali also)

This tin contains the equivalent of
(*a*) Pints of Skimmed Milk
Made in....* Free from harmful bacteria

In the case of sterilized milk—

Made in....* Free from harmful bacteria
Sterilized Full Cream Milk

The declaration referred to shall fulfil the following conditions:—

1. It shall be printed in dark block type upon a light coloured ground;

2. It shall be enclosed by a line and in the case in which the words "Unfit for Babies" are used, there shall be another line enclosing these words;

3. The distance between any part of the words "Unfit for Babies" and the surrounding line enclosing these words shall be not less than one-sixteenth of an inch;

4. The words "Unfit for Babies" shall be printed in English and in vernacular of the province;

5. No matter other than that hereinbefore prescribed shall be printed within either surrounding line;

6. The type used for the declaration shall not in any part be less than one-eighth of an inch in height (or if the gross

* The country of origin should be given here in English and in Vernacular of the Province.

weight of the tin or other receptacle does not exceed twelve ounces, one-sixteenth of an inch in height) and the type used for the words "Unfit for Babies" shall not be less than twice the height of any other part of the declaration; and

7. The declaration shall be completed by inserting at (*a*) the appropriate number in words and figures, *e.g.*, one-and-a-half (1½), any fraction being expressed as eighths, quarters or half.

The label shall, in addition, bear the name and address of the manufacturer of the condensed milk, desiccated milk and sterilized milk or of the dealer or merchant in Bengal for whom it is manufactured.

The label shall be securely affixed to the container so as to be clearly visible. If there is attached to the container a label bearing the name, trade marks, or design representing the brand of the condensed milk, desiccated milk and sterilized milk, the prescribed declaration shall be printed as part of such label.

Bihar: No person shall sell or expose for sale or store for sale any article of food in any tin, bottle, packet or other closed receptacle, unless it bears a label showing the name of the manufacturer of such food and such other particulars as may be prescribed and unless such label is affixed in such manner as may be prescribed.

No person shall give with any article of food sold by him a label, whether attached to or printed on the wrapper or container or not, which falsely describes that article, or is otherwise calculated to mislead as to its nature, substance or quality.

Every hermetically closed receptacle containing condensed or desiccated (dried) milk shall bear a label upon which is printed such one of the following declarations as may be applicable or such other declaration on substantially the same lines as the State Government may in any case direct.

1. *Condensed Milk or Dried Milk*

The type of labels prescribed for condensed milk full-cream sweetened and unsweetened, skimmed milk sweetened and unsweetened, and for dried milk full-cream and skimmed, are the same as those prescribed by Bengal (*Vide* pp. 139–140) except that there is no stipulation in Bihar rules that the following should be mentioned on the labels:—(*i*) the vernacular translation of the

words "Unfit for Babies", (*ii*) mentioning of the country of origin and (*iii*) "Free from harmful bacteria."

In the case of partly skimmed milk, that is to say, dried milk containing not less than 8 per cent but less than 26 per cent of milk fat, the label shall be as follows:—

DRIED PARTLY SKIMMED MILK (*b*) (CREAM)
should not be used for babies except under
medical advice.
This tin contains the equivalent of pints
of (*b*) Cream milk

In the case of any variety of condensed milk, the order of the words contained in the descriptive part of the declaration may be varied so that the word "Sweetened" or "Unsweetened" as the case may be, is placed after the word "Condensed" instead of being placed after the word "Milk".

2. Declaration shall in each case be completed by inserting at (*a*) in the label appropriate number in words and figure, *i.e.*, "one and half (1½)" any fraction being expressed as eighths, quarter or half.

3. The label on any tin or other receptacle containing dried skimmed milk to which sugar or some other substance has been added shall be in the appropriate forms prescribed with the following modifications, namely:—

(*i*) there shall be added to the heading the word "Sweetened" if the only substance added to the milk is sugar, the word "Modified" if the only substance added is a constituent of milk, and the word "Compound" in every other case; and (*ii*) the word "with (*c*) added" shall be added to the last sentence in each case, words being inserted at (*c*) to specify the substance or substances added; (*iii*) The declaration shall be completed as follows, namely:—There shall be inserted at (*b*) the word "three-quarter" if the percentage of milk fat is not less than 20; "half" if such percentage is less than 20 but not less than 14 and "quarter" if such percentage is less than 14 but not less than 8.

4. (*i*) The prescribed declaration shall be printed in dark block type upon a light-coloured ground.

(2) (*a*) The labels shall be printed in dark block type upon a light coloured ground, in English and Kannada.

(*b*) There shall be a surrounding line enclosing the declarations.

(*c*) No matter other than that specified in Clause I shall be printed within the surrounding line.

(*d*) The type used for the declaration shall not, in any part, be less than one-eighth of an inch in height or if the gross weight of the tin or other receptacle does not exceed twelve ounces, one-sixteenth of an inch in height.

(3) The label shall be securely affixed to the tin or other receptacle so as to be clearly visible. If there is attached to the tin or other receptacle a printed transfer or other wrapper bearing the name, trade mark, or design representing the brand of the mixture of coffee and chicory, the declaration shall be printed as part of such wrapper. Any such wrapper shall, in addition, bear the name and address of the manufacturer of the mixture of coffee and chicory or of the dealer or merchant for whom it is manufactured.

(4) Wherever the word "coffee" appears on the label of a tin or other receptacle containing a mixture of coffee and chicory in which the coffee exceeds 50 per cent it shall be immediately followed by words indicating that it contains chicory, printed in type of the same size as that used for the word "Coffee." In the case of a mixture containing more than 50 per cent of chicory any printed label shall describe the contents as chicory and may also state that it is blended with coffee but no wording shall be used that might suggest that the mixture is sold as coffee whether blended or not.

Hyderabad: The draft of the Hyderabad Prevention of the Food Adulteration Bill of 1950 has made provision for "Prescribing the method by which labels shall be affixed, the language in which labels shall be printed and the symbols which shall be used for different articles of Food".

Madras: Every person who wilfully applies to an article of food a warranty given in relation to any other article of food or who wilfully gives a label with any article of food sold by him which falsely describes the article sold, shall be punished.

Every tin or other receptacle containing a mixture of coffee

and chicory shall have affixed to it a label upon which is printed such one of the following declarations as may be applicable:—

(*a*) Where in a mixture of coffee and chicory the proportion of chicory is 50 per cent or less, the declaration shall be in the following form:—

COFFEE BLENDED WITH CHICORY		
This mixture contains :		
Coffee	..	per cent
Chicory	..	per cent

(*b*) Where in a mixture of coffee and chicory the proportion of chicory exceeds 50 per cent the declaration shall be in the following form:—

CHICORY BLENDED WITH COFFEE		
This mixture contains :		
Chicory	..	per cent
Coffee	..	per cent

The labels shall be printed in dark block type upon a light coloured ground, in one of the chief languages of the Province.

There shall be a surrounding line enclosing the declarations.

No matter other than that specified above shall be printed within the surrounding line.

The type used for the declaration shall not, in any part, be less than one-eighth of an inch in height or if the gross weight of the tin or other receptacle does not exceed twelve ounces, one-sixteenth of an inch in height.

The label shall be securely affixed to the tin or receptacle so as to be clearly visible. If there is attached to the tin or other receptacle a printed transfer or other wrapper bearing the name, trade mark, or design representing the brand of the mixture of coffee and chicory, one of the following courses shall be adopted, namely:—

(*a*) The declaration in English and in one of the chief languages of the Province may be printed on, or affixed to, the transfer or other wrapper or affixed to the portion of the tin or other receptacle not covered by the transfer or other wrapper or,

(*b*) the declaration in English may be printed on the transfer or other wrapper and the declaration in one of the chief languages of the Province may be on a separate label affixed to the transfer or other wrapper or the portion of the tin or other receptacle not covered by the transfer or other wrapper.

Any such transfer or other wrapper shall in addition, bear the name and address of the manufacturer of the mixture of coffee and chicory or of the dealer or merchant for whom it is manufactured.

In the case of a mixture containing more than 50 per cent of chicory any printed label shall describe the contents as chicory and may also state that it is blended with coffee but no wording shall be used that might suggest that the mixture is sold as coffee whether blended or not.

Mysore: Any receptacle containing dried, condensed, skimmed or separated milk shall be labelled with an adhesive label which shall contain the information and be of the size, indicated below. The information shall be in block type, printed or written in centre of the label which shall be of white colour. Nothing else shall be printed or written on the label, except the name of the article. The label shall be clearly visible to the purchaser and shall measure at least 2″ x 4″ where only Kannada is used or at least 4″ x 4″ where more than one language is employed.

The only permissible adulterant to coffee is chicory, which may be added to the coffee in a proportion not exceeding 50 per cent. The fact of such an addition and the exact proportion of the adulterant shall be clearly indicated on the label of the container or packet, containing the mixture, in a conspicuous place and in distinct legible letters.

When ground coffee is sold or exposed for sale in loose form, *i.e.*, other than in specifically prepared packets or containers, the receptacles containing the coffee, or on which it is exposed or kept for sale, shall be labelled with labels indicating the nature and extent of the adulterant present (if any) in letters not less than one-half of an inch in size. Absence of such a label will be taken to imply that the coffee so kept or exposed for sale is meant to be sold as pure coffee.

Orissa: Every tin or other receptacle containing concentrated milk shall bear a distinctly and legibly written or printed mark

or label in such form and containing such particulars as may be prescribed by rules made under this Act.

Any person who sells, or offers or exposes for sale or manufactures for sale, concentrated milk in contravention of the above shall be punished,

The articles of food containing preservative to which the rules as to labelling set out in this schedule apply are sausages, sausage meat, coffee extract, pickles and sauces and (where the proportion of benzoic acid exceeds 600 parts per million) grape juice and wine.

Where any of the said articles of food contains preservative, it shall bear a label, on which is printed the following declaration or such other declaration substantially to the like effect as may be allowed by the Provincial Government:—

(*a*) ..... CONTAINS PRESERVATIVE

The Declaration shall be completed by inserting at (*a*) the word "This" or "These", followed by the name of the food.

In the case of grape juice or wine, shall be added to the declaration the words "and is not intended for use as a beverage."

An article sold as a preservative shall bear a label on which is printed the following declaration or such other declaration substantially to the like effect as may be allowed by the Provincial Government.

THIS PRESERVATIVE CONTAINS

(*a*) .....Per cent of Sulphur Dioxide

Where the article contains benzoic acid the words "benzoic acid" shall be substituted for the words "sulphur dioxide".

The declaration shall be completed by inserting at (*a*) in words and figures, excluding fractions (*e.g.* "Seventy (70)), the true percentage of sulphur dioxide or benzoic acid present in the article.

The prescribed declaration shall in each case be printed in dark block type upon a light coloured ground within surrounding line and no other matter shall be printed within such surrounding line. The type used shall not be less than one-eighth of an inch in height or, in the case of grape juice

or wine to which these rules apply, one-sixteenth of an inch in height.

The label shall be securely affixed to the article or be part of or securely affixed to the wrapper or container and in any case shall be so placed as to be clearly visible. If the article bears a label containing the name, trade mark or design representing the brand of the article or the name and address of the manufacturer or dealer, the prescribed declaration shall be printed as part of such label.

No comment on, or explanation of, the prescribed declaration other than any direction as to use in the case of a preservative shall be placed on the label or on the wrapper or container.

No person shall sell, or expose for sale or deposit in any place for the purpose of sale, or despatch or deliver to any purchaser, broker or agent any condensed milk intended for human consumption unless the condensed milk is contained in a tin or other receptacle which is labelled in the manner prescribed provided that where in public refreshment room, restaurant or shop or other public premises, condensed milk is delivered to a purchaser or other person for consumption in the premises, the receptacle containing the condensed milk shall not be required to be labelled in the manner prescribed by these rules.

Where a tin or other receptacle containing condensed skimmed milk is required by these rules, to be labelled, no person shall expose or offer for sale such a tin or receptacle in a paper or other wrapper unless such a wrapper has printed on the outside thereof the words "Unfit for Babies" such words being contained within a surrounding line. The type used for the words shall be not less than a quarter of an inch in height and the printing shall otherwise conform with the rules prescribed for the printing of the same matter on the label affixed to the tin or other receptacle.

The design of labels prescribed for (1) Full cream condensed milk unsweetened and sweetened, and condensed skimmed milk unsweetened and sweetened are the same as those prescribed by Bihar (*vide* pp. 141–42).

The declaration shall in each case be completed by inserting at (*a*) the appropriate number in words and in figure, *e.g.*,

"one and a half ($1\frac{1}{2}$)", any fraction being expressed as eighths quarters, or a half.

The details regarding markings on the labels are the same as those in Bihar (*vide* 4 (i)–4 (ix), pp. 142–144).

PEPSU: On every package containing adulterated food exposed for sale, whether open or closed, there shall be exposed a label in the form appended below:—

This	(*a*) contains an admixture	
of not more than	(*b*) per cent of	(*c*)

(*a*) Here insert the name of the food.
(*b*) Here insert the maximum amount of adulterant which may be present,
(*c*) Here insert the name of the adulterant.

Every such label shall contain the name of the food and the name and the maximum amount of adulterant present there in black letters on a white ground in such manner as to be clearly visible to the purchaser and shall measure at least four inches by three inches.

The language used in such label shall be Urdu, Hindi, Gurmukhi or English:

Provided that, if the municipal or small town committee exercising jurisdiction in area in which such label is displayed decides by resolution passed at an ordinary meeting that the language used shall be any one or any two or more of the said languages, such language or languages shall be used.

Unless the vendor of an adulterated article of food knows or has reason to believe that the purchaser is able to read and understand the label, he shall give to the purchaser the information contained in the label by word of mouth, at the time of purchase.

In all cases where a person if required under these rules to exhibit a label or notice to the effect that food sold by him is adulterated, and such label or notice is worded in Urdu, Hindi or Gurmukhi, the word to be used in translating the word adulteration and its derivatives shall be the word "milawat" and its derivatives.

Every person selling or manufacturing *banaspatine* or *charbini* or any food containing or prepared with *banaspatine* or *charbini* shall display in a conspicuous position on the premises

in which he sells or manufactures such *banaspatine* or *charbini* or such food a sign-board showing that *banaspatine* or *charbini* as the case may be, is being sold or manufactured therein.

(1) Every package in which *banaspatine* or *charbini* is exposed for sale by retail shall have painted or otherwise durably marked thereon in red letters on a white ground in Urdu, Hindi, Gurmukhi or English the words "banaspatine" or "charbini" as the case may be, the space occupied by the white ground shall not measure less than four inches by three inches and shall in the case of a square package be painted or marked on each of the four sides of the package, and in the case of a round package be painted or marked at least three times on the circumference of the package, each marking being equidistant from those on either side of it.

(2) On every receptacle or utensil, in or on which any article of food prepared with *banaspatine* or *charbini*, as the case may be, are exposed for sale, shall be displayed in such manner as to be clearly visible to the purchaser a label measuring at least four inches by three inches setting forth in red letters on a white ground in Urdu, Hindi, Gurmukhi or English that the said articles have been prepared with *banaspatine* or *charbini* as the case may be.

(3) No person selling *banaspatine* or *charbini* shall deliver to a customer a portion of *banaspatine* or *charbini* in any package, unless the word "banaspatine" or "charbini", as the case may be, is really printed on the outside of such package in red letters on a white ground in Urdu, Hindi, Gurmukhi or English.

Provided that if the municipal or small Town Committee exercising jurisdiction in the area in which any notice, label or mark is required by any of the foregoing provisions of this rule to be displayed decides by resolution passed at an ordinary meeting that the language to be used therein shall be any one or any two or more of the four languages prescribed in such provisions, such language or languages, shall be used.

Punjab: No person shall sell, whether wholesale or retail, or forward by any public conveyance any *banaspatine* or *charbini* unless (*a*) every package containing *banaspatine* or *charbini*, whether open or closed, bears the words "Banaspatine" or "Charbini" as the case may be, durably marked in English on

the top, bottom and sides thereof, the mark being on the package itself, and not solely on a label, ticket or other thing attached thereto and in such other manner or language as may be prescribed and (*b*) there is attached to every package of *banaspatine* or *charbini* exposed for sale by retail in such a manner as to be clearly visible to the purchaser a label marked "Banaspatine" or "Charbini", as the case may be, in red letters on a white ground in such language as may be prescribed.

No person selling *banaspatine* or *charbini* shall deliver to a customer a portion of *banaspatine* or *charbini* in any package unless the word "Banaspatine" or "Charbini", as the case may be, is printed on the outside of such package in red letters in such language as may be prescribed.

Rajasthan (Jaipur): On every package containing adulterated food exposed for sale, whether open or closed, there shall be exposed a label as prescribed.

Every such label shall contain the name of the food and the name and the maximum amount of adulterant present there in block letters on a white ground in such manner as to be clearly visible to the purchaser and shall measure at least four inches by three inches.

The language used in such label shall be Hindi. The word to be used in translating the word "adulteration" and its derivatives shall be the word "milawat" and its derivatives.

Unless the vendor of an adulterated article of food knows or has reason to believe that the purchaser is able to read and understand the label, he shall give to the purchaser the information contained in the label by words of mouth at the time of purchase.

(Marwar): *Mode of labelling adulterated food sold in packages*:—On every package containing adulterated food exposed for sale, whether open or closed, there shall be exposed a label in appropriate form.

Every such label shall contain the name of the food and the name and the maximum amount of adulterant present there in block letters on a white ground in such manner as to be clearly visible to the purchaser and shall measure at least four inches by three inches.

Language of labels of adulterated food:—The language used in such label shall be Hindi.

Vendors to supply information orally if purchaser is unable to read label of adulterated food:—Unless the vendor of an adulterated article of food knows or has reason to believe that the purchaser is able to read and understand the label, he shall give to the purchaser the information contained in the label by word of mouth at the time of purchase.

In all cases where a person if required under these Rules to exhibit a label or notice to the effect that food sold by him is adulterated, and such label or notices is worded in Hindi, the word to be used in translating the word adulteration and its derivatives shall be the word 'milawat' and its derivatives,

Every container or package containing *banaspatine* or *charbini* or refined edible vegetable oil or unrefined edible vegetable oil other than *Til* or *Sarsoon* oil exposed or transported for sale shall bear the words 'banaspatine' or 'charbini' or 'refined edible vegetable oil' or unrefined edible vegetable oil other than *Til* or *Sarsoon* oil as the case may be, distinctly marked in Hindi on the sides of such container or package.

Travancore–Cochin (Cochin): Any receptacle containing any notified article shall be labelled with an adhesive label which shall contain the true information regarding its contents. The information shall be printed or written in dark block type upon a white or light coloured ground within a surrounding line and no other matter shall be printed or written within such surrounding line. The label shall be clearly visible to the purchaser.

No person shall give with any notified article sold by him a label whether attached to or printed on the wrapper or container or not, which falsely describes that article or is otherwise calculated to mislead as to its nature, substance or quality.

If such person proves that he did not know and could not with reasonable diligence have ascertained that the label was of such a character as aforesaid, he shall not be considered to have given a false label under this Rule.

(Travancore): Any person who wilfully uses in connection with the sale of any notified article any label (whether attached to or printed on the container or wrapper of the article) which falsely describes the article or which contains a description likely to mislead the purchaser as to the nature,

substance, colour, quality or other specification of the articles shall be punishable.

Uttar Pradesh : A person who gives with any food sold by him a label whether attached to or printed on the wrapper or container which incorrectly describes that food or is otherwise calculated to mislead as to its nature, substance or quality, shall be guilty of an offence.

Every advertisement and every price or trade list or label for an article of food which contains an addition, admixture. or deficiency shall describe the food as containing such addition, the admixture or deficiency and shall also specify the nature and quantity of such addition, admixture or deficiency. No such advertisement or price or trade list or label attached to the container of the food shall contain any words which might imply that the food is pure.

Every package, receptacle, vessel or parcel, containing a food which is not pure by reason of any addition, admixture or deficiency, shall be labelled with an adhesive label which shall be in the form and contain the information indicated in the label as given below. Such information shall be printed or written in bold letters either in English or in Hindi or in both. The declaratory label shall be clearly visible to the purchaser.

The declaratory label shall be in Hindi or in English or in both:

DECLARATORY LABEL

This—

(*a*) .....Contains an admixture of not more than

(*b*) .....per cent of

(*c*) .....

(*a*) Here insert the name of food; (*b*) Here insert the quantity of admixture which may be present and (*c*) Here insert the name of the admixture, or the name of the ingredient which is deficient.

Where the context demands it, the words "contains an admixture of" shall be replaced by the words "contains an addition of" or "is deficient in."

Every label of *coffee mixture* shall describe such mixture in the manner specified in Madras State (*vide* p. 152)

The label shall be printed in bold letters upon a light coloured ground in English or in Hindi or in both.

There shall be a surrounding line enclosing the declarations.

No matter other than that specified shall be printed within the surrounding line.

The label shall be securely affixed to the tin or other receptacle so as to be clearly visible. If there is attached to the tin or other receptacle a printed transfer or other wrapper bearing the name, trade mark or design representing the brand of the mixture of coffee and chicory, one of the following courses shall be adopted, namely:—

(*a*) the declaration in English and/or Hindi may be printed on or affixed to the transfer or other wrapper or affixed to the portion of the tin or other receptacle not covered by the transfer or other wrapper, or

(*b*) the declaration in English may be printed on the transfer or other wrapper and the declaration in Hindi may be on a separate label affixed to the transfer or other wrapper or the portion of the tin or other receptacle not covered by the transfer or other wrapper.

Any such transfer or other wrapper shall, in addition bear the name and address of the manufacturer of the mixture of coffee and chicory or of the dealer or merchant for whom it is manufactured.

No person shall sell or offer or expose for sale or deposit in any place for the purpose of sale or despatch or deliver to any purchaser, broker or agent, any mixture of coffee and chicory unless:—

(*i*) it is contained in a tin or other receptacle to which a label is affixed in the manner prescribed, and

(*ii*) the contents of the tin or other receptacle are in accordance with the description on the label;

Provided that where a mixture of coffee and chicory is sold by weight and is not placed in the tin or other receptacle in which it is delivered to the purchaser until immediately before such delivery, the requirements of the rule shall be deemed to be satisfied if the matter therein required to appear on the label

affixed to tin or other receptacle, is printed on a separate label or notice delivered to the purchaser.

(*iii*) Absence of such a label shall be taken to imply that the coffee so kept or exposed for sale is meant to be sold as pure coffee.

Sale and Control of Condensed Milk

No person shall sell, or expose for sale or deposit in any place for the purpose of sale, or deliver to any purchaser, broker or agent any condensed milk or condensed skimmed milk intended for human consumption, unless the same is contained in a tin or other receptacle which is labelled in the manner prescribed. Provided that where in any public refreshment room, restaurant or shop or other public premises condensed milk is delivered to a purchaser or other person for consumption in the premises, the receptacle containing the condensed milk shall not be required to be labelled in the manner prescribed by these rules.

The design of the labels for condensed full cream milk, unsweetened and sweetened and condensed skimmed milk, unsweetened and sweetened, are the same as those prescribed in Bihar (*Vide* pp. 141–42)

The declaration shall in each case be completed by inserting at (*a*) the appropriate number in words and in figures *e.g.* "one and a half (1½)" fraction being expressed as eighths, quarters or a half.

The type of marking on the labels are the same as those prescribed by Bihar (*Vide* 4 (i), (ii), (iv), (vi), (vii), (viii) (*a*), and (ix), pp. 142–44).

There shall not be placed on any tin or other receptacle containing condensed milk any comment or explanation of, or reference to either the statement of equivalent contained in the prescribed declaration or on the words "machine skimmed", "skimmed", or "unfit for babies" except instructions as to dilution as follows:

"To make a fluid not below the composition of fresh milk or skimmed milk, as the case may be, with the contents of this package, add (here insert the number of parts) parts of water by volume to one part by volume of this milk."

Agmark (Govt. of India): The Agricultural Marketing Authority has prescribed specifications for different grades of a number of

food-stuffs. For each of the grade of any particular commodity, a specific design and colour of the label to be affixed on the container is given. On the label are written "AGMARK" and the name and grade of the commodity. The colour of the label also indicates the grade of foodstuff. For instance, in the case of cocoanut oil, the colours, white, red, blue, yellow and green represent Refined, Grade I, Grade II, Commercial A and Commercial B grades of cocoanut oil, respectively.

Army Service Corps (Govt. of India): The ASC has prescribed elaborate procedure for marking (labelling) containers of food-stuffs, tins, bottles and bags and also cases containing these tinned and bottled foodstuffs. These markings in each case are generally as follows:—

Food-stuffs in Tins and Bottles

1. Description of contents
2. Brand
3. Name of manufacturer/ supplier
4. Net weight of contents
5. Warranty period/Month of Manufacture

Food-stuffs in Bags

1. Description of contents
2. Name of Supplier
3. Net weight
4. Gross weight
5. Date of manufacture and the warranty period have also to be indicated in some cases.

Markings on cases:— Tinned and bottled food-stuffs, supplied to the Army have to be packed in suitable wooden and card-board cases on which the following markings will have to be given :—

1. Description of contents.
2. Number of tins/bottles and net weight of contents.
3. Gross weight.
4. Name of the Manufacturer/Supplier.
5. Warranty period/and date of acceptance.

For packaging foodstuffs in tins and bottles it is generally laid down that containers should be hermetically sealed, the size of container being specified in each case. In certain cases special provisions are made as given below :—

Biscuits:—The biscuits service shall be neatly packed in paper packets, having three layers of paper wrapping, the innermost layer being of grease-proof paper and the other two of ordinary paper. Each packet shall contain 12 biscuits of one type only. The colour of the outermost wrapper shall be blue for sweet and grey for saltish biscuits.

Cheese:—The cheese shall be supplied wrapped in best quality tin foil in well-made hermetically sealed tins of selected I.C. plates, best coke finish. The tins shall be throughly cleaned before filling, and be properly painted or lacquered all over on the outside (including the portion under a label) to preserve the tin from rust. Each tin shall contain 12 oz. of cheese.

Coffee:—The coffee shall be gas-packed in carbon dioxide in hermetically sealed one gallon tins, fabricated from bright tinplate, with tagger and press-in-lids. The net contents of each tin shall be 7 lb.

ENFORCEMENT OF FOOD LAWS

Of the 21 States in India, where Prevention of Food Adulteration Acts are in force, 19 furnished information regarding the number of samples examined, the number of samples found adulterated and the number of convictions made as a result of legal proceedings during the years 1949-50, 1950-51 and 1951-52. Detailed information in this regard showing figures for individual commodities, wherever possible, are shown in Table I. A summary of the data showing percentage of samples found adulterated and percentage of convictions calculated on the basis of samples found adulterated is presented in Table II.

TABLE I

State-wise and commodity-wise statement of number of samples examined, number of samples found adulterated and number of convictions made during 1950-51, 1951-52 & 1952-53

Name of State and Commodity	1950-51			1951-52			1952-53		
	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions
Ajmer									
Butter	3	—	—	—	—	—	1	—	—
Ghee	240	21	18	265	49	47	193	53	49
Milk	833	403	384	829	654	649	877	557	527
Oils, Edible	34	12	2	—	—	—	—	—	—
Wheat flour	—	—	—	1	1	1	—	—	—
Total ..	1,110	436	404	1 095	704	697	1,071	610	576
Assam									
Biscuits	—	—		1	1		—	—	
Butter	2	1		6	4		6	2	
Dhal	5	—		—	—		—	—	
Ghee	30	21		71	47		27	14	
Gur	—	—		3	2		—	—	
Horlicks	1	1		1	1		—	—	
Milk	21	13		44	31		46	40	
,, Condensed	—	—		2	—				
,, Powder	2	1		—	—		2	—	
,, Skimmed	—	—		1	—		—	—	
Milo	—	—		—	—		1	—	
Molasses	2	—		—	—		1	—	
Oil, *Bajra*	—	—		—	—		1	1	
,, Cocoanut	2	—		—	—		2	2	
,, Groundnut	3	1		—	—		—	—	
,, Hydrogenated	38	11		33	10		30	4	
,, Linseed	34	34		—	—		—	—	
,, Mustard	356	204		350	132		172	66	
,, Radish seed	1	1		—	—		—	—	
,, *Til*	—	—		4	4		—	—	

Not available

Not available

Not available

Enforcement of Food Laws Table I (*Continued*)

Name of State and Commodity	1950-51			1951-52			1952-53		
	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions
Pulses	—	—		3	3		1	—	
Rice	5	5		4	1		13	5	
Salt	1	1		—	—		—	—	
Sugar	2	1		—	—		3	1	
Tea	30	22		173	153		126	98	
Turmeric powder	3	—		4	2		1	Nil	
Wheat	—	—	Not available	1	1	Not available	5	3	Not available
Wheat flour, *Atta*	4	4		20	18		46	28	
,, *Maida*	6	5		7	—		9	5	
Total ..	548	326	230	728	410	26	493	270	47
Bengal*									
Ghee	94	62		49	29		67	35	
Milk	391	253		499	315		500	324	
Oil, Mustard	3,570	941	Not available	2,600	303	Not available	1,908	90	Not available
Tea	21	—		51	4		33	2	
Wheat flour, *Atta*	57	5		41	4		43	6	
Total ..	4,133	1,261	1,031	3,240	655	395	2,551	457	401
Bhopal									
Chillies	—	—	—	—	—	—	1	—	—
Coriander	—	—	—	—	—	—	1	—	—
Ghee	55	33	5	78	41	3	98	46	3
Ice cream	—	—	—	—	—	—	1	1	1
Milk	28	20	8	260	220	141	119	79	64
Oils, Edible	20	12	—	34	20	2	52	22	—
,, Hydrogenated	9	—	—	19	3	3	16	1	1
Sweetmeat	—	—	—	—	—	—	18	3	3
Miscellaneous	2	—	—	2	—	—	3	—	—
Total ..	144	65	13	393	284	149	309	152	72
Bihar ‡									
Ghee	342	136		279	92		303	163	
Milk	60	25		96	44		361	160	
Oil, Groundnut	60	12	Not available	92	2	Not available	—	—	Not available
,, Hydrogenated	177	85		120	30		271	5	

* The figures refer to the data received from 43, 44 and 38 local bodies (out of a total of 97 local bodies) during the years 1950, 1951, and 1952 respectively.

‡ The figures relate to 1950, 1951 and 1952.

Enforcement of Food Laws Table I (*Continued*)

Name of State and Commodity	1950-51			1951-52			1952-53		
	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions
Oil, Linseed	191	70	Not available	207	69	Not available	—	—	Not availuble
,, Mustard	2,278	862		1,872	540		1,897	237	
Sweetmeat	256	143		230	37		180	15	
Turmeric (*Haldi*)	255	143		195	40		193	55	
Wheat flour, *Atta*	101	45		160	28		491	81	
Total ..	3,720	1,521	Not availa-ble	3,251	882	Not availa-ble	3,696	716	Not availa-ble
Bombay									
Aerated waters	32	2	1	31	—	—	36	1	1
Asafoetida	13	4	2	14	1	—	9	8	2
Butter	721	159	119	749	185	112	743	236	180
Cheese	1	1	—	1	—	—	4	1	1
Chillies	15	—	—	3	—	—	4	2	—
Coffee	42	8	5	33	5	4	38	10	5
Colours	1	—	—	—	—	—	—	—	—
Cream	—	—	—	—	—	—	1	—	—
Curd	13	9	8	52	24	10	55	35	37
Ghee	1,305	230	123	2,880	426	275	2,059	420	258
Honey	2	1	—	—	—	—	—	—	—
Ice-Cream	19	10	2	12	2	—	26	9	4
Khoa	3	1	—	17	10	2	2	2	—
Margarine	60	—	—	22	1	—	9	—	—
Milk	23,973	7,242	5,874	26,119	5.356	4 090	26,601	4,430	3,368
Oil, Edible	1,756	199	163	1,924	92	56	2,557	120	90
,, Cocoanut	82	28	23	78	30	18	77	9	6
,, Groundnut	116	13	8	125	3	7	203	2	2
,, Hydrogenated	384	14	14	226	3	3	288	5	5
,, Mustard	1	1	1	4	—	—	2	—	—
,, Sesame	3	—	—	4	1	1	5	—	—
Rajgira	2	—	—		—	—	—	—	—
Sago	—	—	—	4	4	—	7	7	2
Sugar	—	—	—	2	—	—	1	—	—
Sweets	12	3	3	38	5	4	12	—	—
Tea	258	19	9	326	51	31	314	18	13
,, prepared	943	259	160	894	217	171	1,165	264	138
Turmeric	101	1	—	72	—	—	82	1	—
Unclassified	3,014	1,424	1,194	4,474	901	505	3,849	1,170	756
Total ..	32,872	9,628	7,709	38,104	7,317	5,289	38,149	6,750	4,868

Coorg : During 1953, 30 food samples were examined, 19 found adulterated and 15 cases ended in convictions. Figures relating to 1951 and 1952 and other details are not available.

Enforcement of Food Laws Table I (*Continued*)

Name of State and Commodity	1950-51			1951-52			1952-53		
	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions
Delhi*									
Butter	394	216	Not available	322	131	Not available	262	131	Not available
Cream	107	—		64	10		43	1	
Ghee	911	115		818	108		750	113	
Khoa	111	39		107	32		225	37	
Milk	7,450	1,824		7,141	1,876		6,593	1,984	
Total ..	8,973	2,194	384	8,452	2,157	547	7,873	2,266	Not available
Hyderabad									
Butter	(a) 184	90	Not available	(a) 134	69	Not available	6	—	Not available
Chocolate	—	—		—	—		1	1	
Curds	—	—		—	—		2	2	
Ghee	—	—		—	—		104	51	
Honey	—	—		—	—		1	—	
Milk	385	171		401	212		334	145	
Oils, Edible	49	4		147	20		186	14	
,, Hydrogenated	97	9		68	3		76	1	
Total ..	715	274	Not available	750	305	Not available	732	214	Not available
Madhya Bharat (Indore)									
Butter	—	—	Not available	—	—	Not available	2	1	Not available
Cream	—	—		—	—		1	1	
Curd	—	—		—	—		1	Nil	
Ghee	57	14		161	72		104	53	
Ice	1	Nil		—	—		—	—	
Khoa (*Mawa*)	2	1		4	1		—	—	
Milk	1,290	643		2,171	1,639		3,026	1,354	
Oil, Edible	8	Nil		23	5		—	—	
,, Hydrogenated	—	—		—	—		22	Nil	
Vermicelli	—	—		1	Nil		—	—	
Total ..	1,358	658	Not available	2,360	1,717	Not available	3,156	1,409	Not available

* Figures relate to 1950, 1951 and 1952.

(*a*) The figures relate to both butter and ghee samples.

Enforcement of Food Laws Table I (*Continued*)

Name of State and Commodity	1950-51			1951-52			1952-53		
	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions
Madhya Pradesh*									
Besan	—	—		4	2		—	—	
Butter	54	47		68	63		14	1	1
Ghee	118	35		71	23		197	13	10
Gur	7	3		12	7		—	—	
Khoa	1	1		3	1		1	—	
Milk	141	84		265	199		1,083	327	131
Oil, Coconut	4	2		4	1		—	—	
,, Groundnut	163	31		100	35		7	—	
,, Hydrogenated	26	16		36	11		—	—	
,, Linseed	44	10		22	1		1	—	
,, Mustard	10	4		14	8		1	—	
,, Safflower-*kardi*	5	4		—	—		—	—	
,, Sesame	41	14		22	2		568	10	10
Pedha	—	—		1	1		2	—	—
Wheat flour-*atta*	—	—		1	1		—	—	
Total ..	614	251	Not available	623	355	Not available	1,874	351	152
Madras									
Butter	869	280		871	377				
Coffee	965	180		1,230	355				
Dhals and Flours	621	385		575	258				
Ghee	1,783	395		1,879	610				
Honey	63	9		82	11				
Milk	15,119	9,253		14,177	9,083				
Oil, Coconut	1,431	166		1,368	78				
,, Groundnut	476	34		409	27				
,, Hydrogenated	30	9		30	16				
,, Kusuma	21	2		16	4				
,, Sesame	1,786	280		1,835	173				
Sweets and other Ghee preparations	102	67		101	70				
Tea	167	42		557	170				
Turmeric	192	57		201	39				
Unclassified	77	39		130	35				
Total ..	23,702	11,198	Not available	23,443	11,306	Not available	Not available	Not available	Not available

Not available

* These figures relate to 1950, 1951 and 1952.

Enforcement of Food Laws Table I (*Continued*)

Name of State and Commodity	1950-51			1951-52			1952-53		
	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions
Mysore									
Chicory				1	—		—	—	
Coffee and Tea				143	6	1	114	9	8
Curds				43	14	14	4	—	
Ghee and Butter	Not available	Not available	Not available	277	66	27	362	105	19
Milk				521	310	274	400	145	60
Oils edible				3	1		4	2	
Total ..	Not available	Not available	Not available	988	397	316	884	261	87
Orissa									
Total number of all samples	424	205	159	506	164	106	509	153	69
PEPSU									
Bread	—	—		—	—		1	—	
Butter	8	2		10	7		8	3	
Chillies	—	—		—	—		6	4	
Coffee, French	—	—		1	—		—	—	
Corriander	—	—		—	—		3	1	
Curd	—	—		54	12		75	20	
Ghee	9	2		48	8		31	12	
Gur	—	—		21	12		6	4	
Ice cream	—	—		3	2		7	3	
Khoa	3	1		17	16		20	20	
Milk	103	96	Not available	536	186	Not available	343	148	Not available
,, Condensed	—	—		—	—		4	4	
,, Creamed	—	—		—	—		9	—	
Oil, Sarson	10	4		39	—		10	—	
Sago	—	—		9	8		8	3	
Sugar	1 (Syrup)	1		—	—		4	3	
Tea	—	—		44	32		39	14	
Turmeric	—	—		—	—		15	3	
Vinegar, Malt	—	—		6	5		2	2	
Wheat flour, *atta*	—	—		50	9		17	12	
,, *Maida*	—	—		2	1		3	2	
Total ..	134	104	Not available	840	298	Not available	611	258	Not available

Enforcement of Food Laws Table I (*Continued*)

Name of State and Commodity	1950-51			1951-52			1952-53		
	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions
Punjab*									
Aerated Waters	286	133		292	134		520	250	
Asafoetida	—	—		—	—		29	17	
Baking Powder	—	—		—	—		12	3	
Biscuits	—	—		—	—		1	—	
Bread	—	—		—	—		4	1	
Butter	83	42		98	32		124	31	
Carraway	—	—		28	10		106	46	
Chillies	84	42		85	17		74	9	
Cinnamon	—	—		—	—		1	—	
Colours	—	—		—	—		2	1	
Coriander	—	—		21	5		17	3	
Cream	—	—		—	—		7	2	
Curd	685	199		726	160		1,028	212	
Curry powder	—	—		—	—		7	2	
Flour, self-raising	—	—		—	—		1	—	
Fruit Syrup	—	—		—	—		3	—	
Ghee	1,288	257		1,197	197		1,213	286	
Gram flour	—	—		—	—		6	—	
Gur	14	2		37	1		25	—	
Honey	—	—		6	4		18	3	
Ice-candy	—	—		—	—		194	95	
Isabgoal	—	—		—	—		1	—	
Khoa	114	21		133	18		93	2	
Mango powder	—	—		—	—		18	8	
Milk	4.973	2,198	Not available	6,683	2,344	Not available	8,254	2,115	Not available
,, Powder	73	72		—	—		—	—	
Oils, Edible	1,065	219		580	30		280	7	
,, Hydrogenated	210	13		178	30		133	16	
Pepper	21	9		65	30		81	32	
Pomogranate seeds	—	—		—	—		11	—	
Sago	7	—		—	—		9	3	
Salt	—	—		—	—		10	—	
Soup	5	2		—	—		36	10	
Sugar	38	—		—	—		7	4	
Sweets	13	1		—	—		52	3	
,, *Barfi*	—	—		—	—		1	—	
,, *Halwa*	—	—		—	—		2	—	
,, *Revri*	—	—		—	—		227	2	
,, Sugar	—	—		—	—		17	7	
Tea	154	62		233	79		498	202	
Til (Sesame seeds)	—	—		—	—		1	—	
Turmeric	412	91		252	16		159	12	
Vinegar	7	4		22	14		38	27	

* Figures relate to 1950, 1951 and 1952.

Enforcement of Food Laws Table I (*Continued*)

Name of State and Commodity	1950-51			1951-52			1952-53		
	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions
Wheat flour, *atta*	35	13	Not available	32	2	Not available	29	13	Not available
,, *Maida*	—	—		—	—		7	—	
Wheat–*Suji*	—	—		5	1		—	—	
Miscellaneous	—	—		91	16		151	—	
Total ..	9,557	3,370	2,818	10,764	3,140	2,987	13,506	3,424	2,120

Rajasthan (Bikaner)

No sample of food-stuff was examined during the three years ending 1952.

Rajasthan (Jaipur)*

Butter	2	2	2	—	—	—	—	—	—
Chillies	16	5	5	—	—	—	—	—	—
Coriander	6	—	—	—	—	—	—	—	—
Curd	—	—	—	—	—	—	7	4	4
Ghee	57	29	29	16	5	5	121	67	67
Gram Flour	—	—	—	1	—	—	—	—	—
Khoa	1	1	1	—	—	—	—	—	—
Mango dry powder	1	1	1	—	—	—	—	—	—
Milk	62	41	41	13	9	9	90	59	59
Oil Groundnut	—	—	—	2	—	—	2	2	2
,, *Sarson*	—	—	—	—	—	—	2	—	—
,, Sesame	6	2	2	—	—	—	—	—	—
,, Sweet	—	—	—	—	—	—	4	2	2
Puri	5	5	5	1	—	—	—	—	—
Rice	2	—	—	—	—	—	—	—	—
Sugar	—	—	—	—	—	—	5	—	—
Sweet–*Boondi*	4	2	2	1	—	—	—	—	—
,, *Jilebi*	7	7	7	4	1	1	7	6	6
,, *Laddu*	—	—	—	2	—	—	—	—	—
,, *Malpua*	2	2	2	—	—	—	—	—	—
,, Others	2	2	2	1	—	—	2	1	1
Turmeric	1	—	—	—	—	—	—	—	—
Wheat flour *atta*	3	1	1	1	—	—	—	—	—
Miscellaneous	3	1	1	—	—	—	—	—	—
Total ..	180	101	101	42	15	15	240	141	141

Rajasthan (Jodhpur) ‡

Ghee	2,253	193		2,455	298		3,827	715	
Milk	1,222	127		1,195	235		1.461	292	
Miscellaneous	270	68		293	134		279	71	
Total ..	3,745	388	402	3,943	667	453	5,567	1,078	683

* These figures refer to the Jaipur city municipality area only. Regular records of samples taken in district areas of the former Jaipur State were not maintained.

‡ The figures for 1950–51 relate to the period 1–10–49 to 30–9–1950.

Enforcement of Food Laws Table I (*Continued*)

Name of State and Commodity	1950-51			1951-52			1952-53		
	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions	No. of samples analysed	No. of samples found adulterated	No. of convictions
Travancore-Cochin (Cochin)									
Coffee	11	—	Not available	41	19	Not available	42	12	Not available
Ghee/Butter	6	—		35	8		29	7	
Milk	99	49		298	166		236	139	
Oil–Coconut	19	—		26			34	—	
,, Groundnut/ Sesame	15	—		40	6		35	3	
Tea	6	—		110	29		101	6	
Total ..	156	49	Not available	550	228	Not available	477	167	Not available
Travancore-Cochin (Travancore)									
Butter	Figures for individual commodities not available			Figures for individual commodities not available			25	5	—
Buttermilk, curd							41	26	—
Coffee Powder							93	35	—
Ghee							38	13	—
Milk							1,528	1.002	—
Oils, Edible							113	5	—
Starch Products							18	6	—
Tea							238	130	—
Miscellaneous							42	31	—
Total ..	2,000	1,028	478	1 949	1,036	634	2,136	1.253	Not available
Uttar Pradesh *									
Flours and Cereals	537	209	Not available	650	203	Not available	912	223	Not available
Ghee and Butter	3 270	777		3.421	710		4,143	947	
Milk	8,168	2,962		9.730	3,332		10,750	26,87	
Oils, Edible	9.041	2,432		4,074	765		3,993	400	
,, Hydrogenated	691	146		930	203		1,015	73	
Miscellaneous	3,095	907		4,395	1,134		4,894	1,144	
Total ..	24,802	7,433	7,140	23,207	6,740	5,074	25,527	5,474	Not available

* Figures relate to 1950, 1952 and 1952.

TABLE II

Statement showing total number of samples examined, found adulterated and convictions during the period 1950–51 to 1952–53

Sl. No.	Name of the State	No. of samples examined	No. of samples found adulterated	No. of convictions	Percentage samples adulterated	Percentage convictions on the basis of samples examined	Percentage convictions on the basis of samples found adulterated
1	Ajmer	3276	1750	1677	53·4	51·2	95·8
2	Assam	1769	1006	303	56·9	17·1	30·1
3	Bengal	9924	2373	1827	23·9	18·4	77·0
4	Bhopal	846	501	251	59·2	29·7	50·1
5	Bihar	10667	3119	*	29·2	*	*
6	Bombay	109125	23695	17866	21·7	16·4	75·4
7	Coorg (*a*)	30	19	15	63·0	50·0	78·9
8	Delhi	25298	6617	931	26·2	3·7	14·1
9	Hyderabad	2197	792	*	36·0	*	*
10	Madhya Bharat (Indore)	6874	3784	*	55·0	*	*
11	Madhya Pradesh	3111	957	152	30·8	4·9	15·9
12	Madras (*b*)	47145	22504	*	47·7	*	*
13	Mysore (*b*)	1872	638	403	34·1	21·5	63·2
14	Orissa	1439	522	334	36·3	23·2	64·0
15	PEPSU	1585	660	*	41·6	*	*
16	Punjab	33827	9934	7925	29·4	23·4	79·8
17	Rajasthan (Bikaner)	*	*	*	*	*	*
18	do (Jaipur)	462	257	257	55·6	55·6	100·0
19	do (Jodhpur)	13255	2133	1538	16·1	11·6	72·1
20	Travancore-Cochin { Cochin	1183	444	*	37·5	*	*
21	do (Travancore)	6085	3317	1112(*b*)	54·5	28·2(*c*)	53·9 (*c*)
22	Uttar Pradesh	73536	19254	12214 (*b*)	26·2	25·4(*c*)	88·6 (*c*)

*: Figures not available. (*a*): For 1952–53 only. (*b*): For 1950–51 and 51–52 only. (*c*): On the basis of 2 years only.

A COMPARATIVE STUDY OF CHEMICAL STANDARDS FOR FOOD-STUFFS AND OTHER PROVISIONS MADE IN INDIAN FOOD LAWS

A scrutiny of the standards for food-stuffs prescribed under food rules of different States in India reveals that these standards often show variation with respect to their nature and values. No State has dealt with all the articles of food-stuffs which are sold in the market. Detailed specifications have, however, been laid down by all the States for certain common articles of food such as milk, ghee, butter, etc. In the case of certain other food articles, and food adjuncts, only a few specifications have been prescribed by some States. A comparative study of these standards is presented in this chapter, taking into account the recommendations made by the Food Adulteration Committee (1937) and the Central Committee for Food Standards of the Government of India.

Aerated Waters:—Although aerated waters are manufactured and consumed all over the country, only three States, namely, Bombay, Orissa and Uttar Pradesh have prescribed certain specifications for them. Further, such specifications as have been prescribed are neither comprehensive nor uniform. In Bombay, the permissible limit for saccharine content in aerated waters is prescribed as 143 p.p.m. or $\frac{1}{2}$ grain per 8 oz., whereas in Uttar Pradesh the addition of any synthetic sweetening, including saccharine, is not allowed. Orissa does not refer to the saccharine content of aerated waters.

Asafoetida:—Though this commodity is used in all parts of the country, specifications for asafoetida have been laid down by one State only *viz.*, Bombay (*Vide* page 13).

Baking powder and self-raising flour:— Specifications for baking powder are given by Bombay and that for self-raising flour by Uttar Pradesh only (*Vide* page 14).

Biscuits:—The only authority which has laid down some specifications for biscuits is the Army Service Corps. Consequently, these specifications are for army purchases only. As regards the use of antioxidants in biscuit manufacture, the Central Committee for Food Standards at its 8th meeting held in February 1954, decided that "Sustane" (Butylated hydroxy-anisole) may be used as an antioxidant.

Butter :—Chemical standards for butter are prescribed in Agmark and ASC specifications and all the 17 Food Laws except that of Hyderabad State.

All the States, except Hyderabad, have prescribed limits for moisture content of butter. These limits are 16 and 20% (*Vide* Table on page 18). In the latter case, the limit has been prescribed on the basis of the average amount of moisture found in the samples analysed and also taking into account that the *desi* butter is usually prepared without the use of a cooling agent like ice. In Bengal, for example, the moisture limit for butter was fixed at 16% when the Bengal Food Adulteration Act was put into operation. Later, on the representation of the local manufacturers, particularly those engaged in the cottage industry, this value was raised to 20%. In Travancore, this value is 16%, but it is made clear that butter made in the usual indigenous way should not contain more than 20% moisture.

Only two States, *viz.*, Assam and U.P., have prescribed limits for saponification value, whereas these States and two more *viz.*, Coorg and Orissa have prescribed limits for Reichert value.

As regards the saponification value it may be noted that, while Assam gives individual saponification values as 222, 224 and 224 for cow's, buffalo's and mixed butters respectively, U.P. gives one common value as 222, without categorization.

Similarly, whereas for Assam and U.P. Reichert values are given separately for cow's, buffalo's and mixed butters as 24, 30 and 28 respectively, Coorg and Orissa have prescribed only one value that in Coorg being 28 and in Orissa, 24. It may be noted that in the case of Orissa, the value given refers to cow's butter only. The Reichert values for buffalo's and mixed butters are not prescribed, as samples of these are seldom received for analysis in that State. When, however, samples of buffalo's and mixed butter are received, the values 30 and 28 respectively are made applicable to them. It is understood that the Government of Orissa are being moved to incorporate these values in the rules framed under the relevant Act in force.

Lastly, it may be of interest to note that, of all the authorities quoted in the table of chemical standards for butter, only Assam and the Army Service Corps have prescribed values for the free fatty acid content, which are 2·5 per cent and 1 per

cent respectively, and U.P. is the only State which has prescribed limit of casein in butter as "not more than 1%." Travancore is the only authority which has prescribed the proportion of curd in butter *i.e.* as not more than 1%. No authority except the Agmark and ASC (Govt. of India) has given specification for salt content in butter. According to these authorities, the salted butter may contain 2–3% salt and up to 18% moisture.

Coffee *:—From the table of chemical standards for coffee on page 25, it will be seen that there is considerable variation in the limits fixed for moisture and aqueous extract.

Bihar has fixed the moisture content as 'nil' which does not appear to be a practicable limit. The ASC has fixed the moisture limit as "not more than 4%", while Madhya Pradesh fixed it at 1% for roasted and ground and 6% for unroasted coffee.

In Orissa also, a limit of 6% has been prescribed for unroasted coffee, but no standards for roasted coffee have been prescribed. Under the peculiar humid climatic conditions in the Cochin State, a comparatively high limit for moisture content *viz.*, 6% has been fixed for roasted coffee. There are 13 States in all, including Madras, which is an important coffee-growing State, which have not prescribed any limit. The Central Committee for Food Standards also suggested in 1944 that the moisture content of coffee need not be taken into consideration while framing standards for this commodity.

The specification for aqueous extract is based on hot water extract except in the case of ASC where it is specially mentioned as cold water extract. Only 8 States have prescribed

* The Central Committee for Food Standards at its 8th meeting held in February 1954 reviewing the chemical standards laid down earlier (*vide* page 25) recommended the following standards for coffee.

(*i*) Total ash (determined on the sample dried to constant weight at 100°C), shall be feathery white or bluish-white in colour and shall be not less than 3·5 per cent and not more than 5·0 per cent by weight of which not less than 65 per cent shall be soluble in boiling distilled water. The ash insoluble in hot dilute HCl shall be not more than 0·01 per cent.

(*ii*) The alkalinity of the ash per gm. of dried coffee shall be equivalent to not less than 3·4 cc. and not more than 4·4 cc. of N/10 acid.

(*iii*) The caffeine content, as obtained by standard methods, shall be not less than 1·2 per cent.

(*iv*) The aqueous extract (determined by extraction of 2 grams of the sample dried to constant weight at 100 C with 100 ml. of boiling distilled water for one hour under reflux) shall be not less than 25 per cent and not more than 32 per cent.

the limit for aqueous extract for coffee. The limits are not uniform. Bombay, Cochin, Madhya Pradesh, Mysore* and ASC have prescribed ranges of values instead of one value. Certain samples of coffee having aqueous extract less than 25% and conforming to the specifications prescribed by Bombay, Madhya Pradesh, Cochin and ASC will not be considered genuine according to the standards fixed in Bihar, Mysore, and Uttar Pradesh. The Central Committee for Food Standards recommended in 1944 that the aqueous extract of coffee should not be less than 26%. Figures for caffeine percentage in coffee have been prescribed only by 5 authorities and range from 0·8 to 1·3%.

It may be mentioned that in India, coffee powder is not graded on the basis of grinds or the fineness of the powder.

Coffee Mixture:—As regards coffee mixture, the permissible percentage of chicory in coffee powder has been mentioned either as "50%" or as "less than 50%" in Food Laws of 9 States. Only two States, *viz*., Bihar and U.P., have prescribed all the standards considered essential by the Central Committee for Food Standards.

Confectionery:—The subject of confectionery has been dealt with by only two Authorities, *viz*., Uttar Pradesh and the ASC. The U.P. Food Rules include certain specifications also for Indian sweets such as *barfi*, *pera*, etc. As regards the hard-boiled sweets, apart from the stipulation that hard-boiled sweets should not contain harmful colouring or flavouring materials and other harmful ingredients, there are no other standards prescribed under food rules of any State. In addition, Uttar Pradesh has stipulated that confectionery should not contain any alcoholic liquor.

Curry Powder:—Although curry powder is used and sold as a common food adjunct in all parts of India, no detailed specifications have been laid down in the Food Rules of any State except those of Assam, Bombay and Uttar Pradesh. Assam and Uttar Pradesh have named the spices which are used for the preparation of curry powder. Further it is stipulated that not more than 15% by weight of curry powder shall consist

* In a communication No. B.E. 3532/54-54 dated February 2, 1954, it is reported that the range of values for aqueous extract for coffee in Mysore State is 25-30%.

of farinaccous matter and salt. As regards the maximum permissible limit for lead in curry powder, while Bombay has prescribed as 5 parts per million, Uttar Pradesh has prescribed it as 2·6 parts per million. Assam has not prescribed any specification for lead at all. The Central Committee for Food Standards has also set the limit of 15% for farinacious matter and salt in curry powder and opined that the limit of 2·5 p.p.m. for lead may be finalized and fixed after examination of more samples of curry powder.

Eggs:—The Agmark (Govt. of India) is the only authority which has prescribed grade designations and definitions of quality of hen and duck eggs. Eggs produced on a commercial scale in various parts of the country are graded, marked and sold accordingly.

Edible oils and fats:—On examining the table of chemical standards for edible oils and fats, it is seen that five States, *viz*., Coorg, Hyderabad, Madras, Mysore and Travancore-Cochin have not prescribed any specifications for edible oils and for edible body fats of animals.

Coconut oil:—Five States, *viz*., Bengal, Madhya Pradesh, Madhya Bharat, Orissa and U.P. have laid down standards for coconut oil with regard to B.R. reading as well as saponification and iodine values. Orissa, however, has not prescribed any standard for B.R. reading. The Food Adulteration Committee (Govt. of India), in 1939, recommended specifications identical with those prescribed for the three values by the States mentioned above. The Agmark, in addition to the above values, has prescribed standards for specific gravity, unsaponifiable matter, acidity and colour for five different grades of coconut oil. Although coconut oil is an important edible oil in Travancore-Cochin and in certain parts of Madras, no specification has been prescribed by these States.

Cottonseed oil:—Cottonseed oil is not a popular edible oil so far in India and consequently, only two States *viz*., Madhya Pradesh and Uttar Pradesh have laid down standards with respect to B. R. reading, saponification and iodine values for this oil. These standards as laid down in the two States are comparable and uniform. The Food Adulteration Committee have recommended the same standards for this commodity.

Groundnut oil:—Although groundnut is cultivated on a large scale in different parts of the country, only 4 States, namely, Madhya Bharat, Madhya Pradesh, Orissa and Uttar Pradesh have laid down standards for groundnut oil with respect to B.R. reading and saponification and iodine values, except Orissa which has not laid down any figure for B. R. reading. Elaborate specifications for this commodity have been prescribed by the Agmark, which comprise, in addition to the above 3 values, those for specific gravity, unsaponifiable matter, acid value and colour for three different grades. It may be mentioned that in the case of iodine value, the ranges prescribed are not uniform, the lower limit showing a more pronounced variation from 85 to 92 than the upper limit which varies from 99 to 101. Further, no authority has prescribed the Ballier's test which is an important criterion for testing the purity of groundnut oil.

Linseed oil:—This oil is generally used for industrial purposes as a semi-drying oil. In certain parts of India, however, it is also used as an edible oil. Four States *viz*., Bihar, Madhya Pradesh, Orissa and Uttar Pradesh have defined and laid down specifications for linseed oil. The Food Adulteration Committee recommended the same specifications for this oil as those prescribed by Madhya Pradesh and Uttar Pradesh. Orissa has not prescribed any value for B.R. reading for this oil. The range of iodine value laid down in this State is higher than that in other States. However, steps are being taken by this State to include values for B. R. reading for linseed and groundnut oils and also to amend the iodine value from 179–210 to 170–200 as recommended by the Food Adulteration Committee. The range for B.R. reading as laid down in Bihar is narrower than that in the other two States. Agmark has not prescribed any specification for this commodity.

Mustard oil:—Chemical standards for this oil have been prescribed by 10 authorities, including Agmark. While Assam, Madhya Pradesh and Uttar Pradesh have given values for B.R. reading, and saponification and iodine values, other States have not prescribed value for B.R. reading. Specifications laid down by Agmark for this oil are more detailed and include acid value, unsaponifiable matter, specific gravity and content of natural essential oil for two grades of oil. The standards recommended by the Food Adulteration Committee are the same as those prescribed by Madhya Pradesh and Uttar Pradesh. The

saponification and iodine values prescribed by various States are more or less uniform except in the case of Rajasthan (Jaipur) where the limits appear to be high. It is now learnt that the saponification value "160-176" taken from Bihar Food Laws and shown in table on page 36 is a misprint and should be "169-176."

Sesame oil:—Chemical standards for this oil have been prescribed by 8 authorities including Agmark which has given detailed standards for four more characteristics of two grades of this oil. Of the above authorities, four States *viz.*, Orissa, PEPSU, Punjab and Rajasthan (Jaipur) have not given values for B. R. reading. Figures for iodine and saponification values prescribed by all the authorities are more or less the same as those prescribed by the Food Adulteration Committee.

Safflower, Poppy seed and Olive oils:—Standards for three characteristics (B. R. reading and saponification and iodine values) of these oils have been laid down by only two States, *viz.*, Madhya Pradesh and Uttar Pradesh and these Standards are in conformity with those recommended by the Food Adulteration Committee.

Other oils:—Among the other oils which are used as edible oils in different parts of India are: *Sarson*, *taramira*, *toria* and *mahua* oils. For these oils, the Food Adulteration Committee have not recommended any standards.

For *sarson* oil, three States, *viz.*, PEPSU, Punjab and Rajasthan (Jaipur and Marwar), have prescribed indentical standards for saponification and iodine values. None of these States have, however, prescribed values for B. R. reading.

For *taramira** and *toria* oils, identical chemical standards for saponification and iodine values have been prescribed by PEPSU and Punjab. For B. R. reading, these States have not prescribed any values.

In the case of *mahua* oil, the only State which has prescribed chemical standards with respect to B. R. reading and saponification and iodine values is Uttar Pradesh. Other States including those in South India where the oil is consumed and is known

* The Central Committee for Food Standards at its eighth meeting held in February 1954 recommended that as this oil was one of the generally recognized edible oils its name should be included in the approved list of edible oils.

as *Illuppa nai* (Mahua ghee) have not prescribed any standard for this oil.

Foodgrains.—None of the States, with the exception of Uttar Pradesh, has laid down specifications for various foodgrains (cereals and millets). Standards laid down by Uttar Pradesh are in conformity with those recommended by the Central Committee for Food Standards in 1947. According to these standards, 'foreign matter' (dust, pebbles, straw, etc.) 'foreign foodgrain' and 'damaged grain' should not exceed 4%, 10% and 10% respectively, and that, in spite of these limits, in no case the total amount of sound grains should be less than 80%. The detailed specifications laid down by the Government of India (F.A.Q. and ASC) and the Government of Punjab are for the purpose of purchase only.

As regards beans, the Central Committee for Food Standards at their seventh meeting held in 1953 opined that any bean which contained hydrocyanic acid exceeding 20 parts per million should be deemed to be unsuitable for edible purposes. Dealing with Kesari gram (*Lathyrus sativas*), the Government of Madras in their G.O. No. 1758 Health, 8 May 1953 prohibited the sale of Kesari gram flour, as such or in admixtures with Bengal gram *dal* or flour. This point was examined by the Central Committee for Food Standards at its eighth meeting and it was agreed that presence of Kesari peas (*Lathyrus sativas*) in various *dals* should be permissible up to a maximum limit of four per cent only.

Fruit Juice and Fruit Syrup:—Only two States *viz.*, Bombay and Uttar Pradesh have dealt with these products in their Food Laws. Detailed specifications for various fruit and vegetable products are covered by the Fruit Products Order, 1947, passed by the Government of India.

Ghee:—Fifteen States, as well as Agmark and ASC. (Govt. of India) have laid down specifications for ghee. Of these, Madhya Bharat, Mysore and Agmark have given detailed specifications for *buffalo's ghee*, *cow's ghee* and *mixed ghee*. The remaining States have prescribed a few specifications for 'ghee' without categorization, and others characterizing the three kinds of ghee.

Of the 18 authorities, only 11 excluding the ASC., have laid down limit for the moisture content in ghee, which is an

important factor determining its storage qualities. The moisture limit prescribed for all the three types of ghee varies from 0·5 to 1·0%. Subsequently, the Expert Committee on Agmark ghee has suggested the moisture content as "not more than 0·3%."

Ranges of values for the B. R. reading have been prescribed by all the States except Coorg, Madras, Jaipur and Cochin. These values vary from 40·0 to 44·5 at 40°C. The values prescribed by the Food Adulteration Committee also fall within this range. The Central Committee for Food Standards recommended at its third meeting held in 1946 that this Standard was of little value and should be dropped from the prescribed specifications. However, the Committee, at their seventh meeting held in 1953 accepted the recommendations of the Expert Committee on Agmark Ghee appointed by Government by India, according to which the B. R. reading at 40°C should be 40·0–43·0, and in winter (Sept.–Feb.) and summer (March–August) for cotton tracts of Saurashtra and Madhya Pradesh 41·5–44·0 and 42·5–45·0 respectively.

The saponification and iodine values have been prescribed by six and two authorities respectively. The former ranges from 215 to 236 and the latter is fixed at 41. Neither of these values has been prescribed by the Agmark or the ASC. The Food Adulteration Committee recommended saponification values for cow's, buffalo's and mixed ghee and these range from 222–234.

Reichert value which indicates the water-soluble, volatile fatty acids in ghee is the most important criterion for testing the purity of ghee and is prescribed by all the authorities. The Central Committee for Food Standards accepted in 1953 the suggested Agmark specifications for all types of ghee as "not less than 28" and for ghee from Saurashtra and Madhya Pradesh during winter and summer as "not less than 24" and "not less than 21" respectively.

The lowest value prescribed for *buffalo's ghee*, which is 20, is by Madhya Pradesh. The highest value, which is 30, has been prescribed by Assam, Bengal, Bihar, Orissa, Uttar Pradesh and Agmark (Blue Label). Other States have prescribed intermediate values, most of which tend to approach the higher limit. The Food Adulteration Committee recommended this value for buffalo ghee as "not less than 30."

In the case of cow's ghee, the lowest value prescribed is 20 (Madhya Pradesh) and the highest value is 28, and this has been prescribed by 4 authorities *viz.*, Coorg, Madras, Punjab and Agmark (Yellow Label). The Food Adulteration Committee recommended this value as "not less than 24."

For mixed ghee, the highest value *viz.*, "not less than 28", has been prescribed by a larger number of States and also recommended by the Food Adulteration Committee. Barring Madhya Pradesh and Hyderabad who have prescribed the same values, *viz*,, 20 and 22 respectively, for cow's ghee, the other States have prescribed uniformly higher values than that for cow's ghee.

Polenske value has been prescribed by eight authorities including Agmark and ASC and is generally "not more than 2·5" for all ghees except in the case of Rajasthan where the higher limit is 4. The lower limit shows a variation ranging from 0·5 to 1·5. The Central Committee for Food Standards accepted in 1953, the Agmark specification suggested by the Expert Committee as 1·0–2·0 and for Saurashtra and Madhya Pradesh for winter and summer ghees as 0·5–1·2 and 0·5–1·0 respectively.

The limit for free fatty acid content in ghee has been prescribed by 10 authorities including Agmark and ASC. The figure varies from 0·3% (Mysore and Madhya Bharat) to 3·0% (Bihar). Most of the other States have prescribed values between 2·5 and 3%. The Central Committee for Food Standards accepted, in 1953, the suggested Agmark specification for special and general grades of ghee as "not more than 1·2 and 2·5%" respectively.

Specification for peroxide value has been prescribed by only two States *viz.*, Bihar and Travancore and it is 5·0 for all the three types of ghee. Agmark and the ASC have not prescribed any value for this test.

Agmark is the only authority which has prescribed Kirschner value for buffalo's and cow's ghee but not for mixed ghee. However, this specification has not been included in the suggested specification by the Expert Committee on Agmark ghee, but the latter has prescribed two other tests *viz*,, Baudouin test and phytosterol acetate test.

The Central Committee for Food Standards, while accepting the recommendations of the Expert Committee on Agmark ghee, suggested that whenever an analyst was in doubt, he might, at his discretion, subject the sample to phytosterol acetate test and other suitable tests.

It will be seen from the above that the formulation of uniform standards for all-India in the case of commodities like ghee presents great difficulties. The regional variations in the values of specifications appear to have been supported by chemical examination of local ghee samples. It seems advisable, therefore, that regional specifications should be laid down for ghee, taking into consideration the factors affecting the quality of ghee. Laying down of seasonal specifications for ghee does not, however, seem to be necessary except for certain typical tracts like the cotton-growing areas in the country.

Ginger:—Uttar Pradesh is the only State which has laid down specifications (*vide* page 79) for ginger although it is grown and consumed almost all over India. The Central Committee for Food Standards at its sixth meeting held in 1951 recommended that the limit for lead in ginger should be fixed at 2·5 p.p.m. It may be suggested that the present specifications for ginger should be made more comprehensive so as to prevent adulteration of this article with other similar roots.

Groundnuts:—In the case of groundnuts Agmark is the only authority which has prescribed specifications for 5 grades of groundnut kernel and 1 grade of groundnut in shell (*vide* Table on page 80). Groundnut is one of the most important oil-seeds in India, and is also consumed in raw, roasted or cooked form. However, no State has prescribed any specification for this commodity.

Honey:—Only two authorities, *viz.*, Uttar Pradesh and ASC have prescribed specifications for honey. The specifications for Uttar Pradesh do not contain the proportion of sucrose content and direct rotation at 20°C, while those of the ASC make no mention about the proportion of reducing sugar in honey. Since this commodity is consumed all over the country and lends itself comparatively to easy adulteration, there is need for prescribing all-India specifications.

Ice Cream:—Only four States have given definition and description of ice cream. Of these, only two States *viz.*, Bihar

and Uttar Pradesh, have given chemical standards. Bihar has given specification for three different kinds of ice cream. Two States *viz.*, Bihar and Uttar Pradesh permit the use of pure gelatin or vegetable gums in ice cream. Bombay prohibits the use of saccharine and skimmed milk, while Travancore precludes any artificial flavouring being added to ice cream. None of the above authorities has, however, specified the type of colouring matter that can be used in ice cream. Only one State *viz.*, Bihar, has made provision for bacteriological examination of ice cream in their definition of this product.

Comprehensive chemical and bacteriological standards require to be laid down for ice cream which is served by numerous hotels and restaurants as well as by hawkers throughout the country.

Malt and Malted Milk :—Only Travancore State has defined malt and malted milk and laid down specifications for the latter. The definition of malted milk does not appear to provide for the use of malt prepared from any grain other than barley, in the preparation of malted milk.

Milk:—Milk is one of the most common and important articles of food and all the 16 States have prescribed standards for fat and non-fatty solids in buffalo's and cow's milk. In the case of mixed milk (cow's and buffalo's), only 13 States, excluding Assam, Bengal and Madhya Pradesh, have prescribed these specifications.

The values for milk fat in buffalo's milk in various States show a comparatively wide variation ranging from "not less than 4%" (Mysore) to "not less than 6·6%" (Hyderabad). Most of the States have prescribed this value as 5·0 or 6·0, except Coorg, Madras and Cochin which have fixed it at 4·5. For cow's milk this value as fixed in various States ranges from 3·0 to 3·5, except in the case of Punjab where it is 4·5. In the case of mixed milk, it varies form 3·0 to 5·5.

The value fixed for non-fatty solids is uniformly the same for each type of milk in all such States as have prescribed this value, except in the case of Marwar where they are uniformly lower. It is understood that these latter values require revision. This value in all the 16 States except Marwar, is "not less than 9·0" for buffalo's milk, and "not less than 8·5" for cow's milk. 13 States excluding Assam, Bengal and Madhya Pradesh have prescribed this value ranging from 8·5 to 9·0.

Other standards laid down by a few States only are specific gravity, ash, lactose, nitrogen content and dirt as sediment These values are more or less uniform except in the case of lactose which is "not less than 4·4%" in Bengal and "not less than 4·0%" in Uttar Pradesh. Since milk is sold by small vendors all over the country and is likely to be contaminated with dirt, it seems necessary that specification for this item should be prescribed by all the States.

Among other types of milk included in the definition and chemical standards for milk are goat's milk and sheep's milk. Only six States have prescribed standards for milk fat and non-fatty solids for goat's milk. In addition, Travancore has set limits for nitrogen content and dirt, and Uttar Pradesh for lactose content and dirt in goat's milk.

In the case of sheep's milk only 3 States have prescribed chemical standards. The value for milk-fat ranges from 3·0% in Travancore to 6·0% in Marwar (Rajasthan), which appears to be too high. In spite of the high fat content, the value for non-fatty solids is lower (7·5%) in Marwar than in other two States (8·5%).

Milk Products:—The milk products for which definitions and chemical standards have been laid down by various States, include buttermilk, *Chhanna*, cheese, condensed milk, cream, curd (*dahi*), dried milk, *Khoa* and skimmed milk.

Buttermilk:—Only two of the four States which have defined buttermilk have given specifications for solids excluding fat in buttermilk. The figure given by Madhya Pradesh is 8·7% and that by Travancore is 6·3%. No other standards are prescribed for this commodity.

Chhanna:—Chemical standards for *chhanna*, which is obtained by precipitating curd from boiling milk by the addition of lactic or citric acids, have been prescribed by four States. These standards relate to proportion of water and fat content of *chhanna*. Water content has been prescribed by Bihar for cow's and buffalo's *chhanna*. Proportion of fat prescribed by Bengal, Madhya Pradesh and Orissa is "not less than 10%" which is the same as recommended by the Food Adulteration Committee. However, Bihar has recommended higher values for this specification, *viz.*, 15% for cow's and 20% for buffalo's.

Cheese:—This commodity has been defined by four States and ASC. Of these, Orissa and the ASC have given specifications for moisture content as "not more than 20%" and for butter-fat content as "not less than 40%" respectively. The ASC has specifically precluded all fats other than butter-fat in cheese.

Condensed milk:—Chemical standards for condensed milk with regard to the proportion of fat (full cream, sweetened and unsweetened) and total milk solids (full cream and skimmed) sweetened and unsweetened have been prescribed by 9 States and the ASC The values for fat and total milk solids in full cream, sweetened and unsweetened milk, are generally the same in all the States as those recommended by the Food Adulteration Committee except Bombay, Uttar Pradesh and the ASC where they are consistently lower. As regards skimmed milk, sweetened and unsweetened, the values for the proportion of the minimum total milk solids prescribed by various States, are 20 and 26%. However, Uttar Pradesh has fixed these values at a higher level *viz.*, 26·5 and 26·5% respectively and the Food Adulteration Committee at 26% in each case. The ASC has not prescribed values for this specification for these two types of skimmed milk (condensed). However, the ASC has given more detailed specification for sweetened and unsweetened condensed milk (full cream) with regard to moisture, sucrose, ash and acidity and also contamination with lead, copper, tin and arsenic.

Cream:—The only standard given for this commodity is the fat content which has been prescribed by four States although seven States have included the definition of cream in their Food Rules. The values for this specification vary from 20 to 40%, those in Madhya Bharat, and Mysore being 20% and Orissa and Uttar Pradesh being 30% and 40% respectively.

Curd:—Chemical standards for curd (*dahi*) have been prescribed by 10 States and they relate to the proportion of fat and non-fatty solids. Eight States have prescribed standards for percentage of fat, while six States have prescribed values for non-fatty solids in cow's and buffalo's curds. Further, non-fatty solids content of *dahi* made from skimmed milk (cow's, buffalo's and unspecified) has been given by 3 States only. The value for minimum fat content in buffalo's curd,

which is higher than that for cow's curd, varies from 4·0% to 6·0%. Specifications for acidity of curd have been prescribed by only two States, *viz.*, Madhya Bharat (Indore) and Mysore, and range from from 2·82 to 3·82% as lactic acid.

Dried Milk:—Chemical standards for various grades of dried milk with respect to fat content have been prescribed by 5 Authorities including the ASC. These values are in conformity with those prescribed by the Food Adulteration Committee except in the case of dried, skimmed milk. On the other hand, the only type of dried milk dealt with by the ASC is dried, skimmed milk.

Khoa:—Chemical Standards for *Khoa*, which is a product obtained by partial desiccation of milk, have been prescribed by 8 States. These standards relate to moisture and fat contents. The maximum moisture content prescribed by 4 States is 10% and that by Bihar is 35%. The minimum proportion of milk-fat in *Khoa* prescribed by 5 States is 20% and that by 3 States is 15%.

Since *Khoa* is an important raw material for the preparation of a number of Indian sweets commonly consumed all over the country and is liable to easy adulteration, there is a need for prescribing adequate chemical and microbiological standards for this commodity.

Skimmed Milk:—Eight States have prescribed chemical standards for this commodity. All the States have prescribed minimum values for milk solids. Of these, two States have also given separate values for non-fatty milk solids for cow's and buffalo's milk, which are 8·5 and 9·0% respectively. The values prescribed for this specification by other States range from 8·7 to 9·0% the lower value agreeing with that recommended by the Food Adulteration Committee. The values for nitrogen content and proportion of dirt in skimmed milk prescribed by Mysore and Travancore-Cochin are the same as for cow's and buffalo's milk (whole). In addition, Mysore has given specification for ash content of cow's and buffalo's skimmed milk.

Saffron:—Bombay is the only State which has defined saffron and prescribed standards for it. Since this commodity is used in various culinary preparations all over the country and is capable of being easily adulterated with colouring matters and

anthers and styles of other flowers, it is desirable to have detailed specifications for this commodity.

Sago:—Sago has been defined by 4 States and most of them have stated that it is a starch product derived from several varieties of sago palm. In recent years a sago-like product prepared from tapioca has been introduced in the market. The Central Committee for Food Standards recommended in 1953 that sago made from tapioca starch should be termed "Tapioca globules." Further examing this question, the Committee at its eighth meeting held in February 1954 adopted the following definition for sago: "Sago is a product derived from sago palm (*Species–Metroxylon*) or from tapioca root (*Mahihot utilissima*)". Chemical standards for sago have been prescribed by only two States *viz*., PEPSU and Punjab. These standards are identical. Although "Tapioca globules" are sold in the market and consumed as sago, no specification is laid down by any State for this commodity.

Salt:—No Food Law in any State has defined or given chemical standards for common salt. However, the Indian Standards Institution, New Delhi, has defined and laid down certain chemical standards for this commodity. According to these standards, the sodium chloride content of salt should not be less than 96·0%. The Government of India decided in 1953 that this proportion may be 94% for the time being, with a target of 96% of NaCl, to be achieved as early as possible.

Sugar:—Only 6 authorities, including the ASC and Agmark, have defined and laid down standards for cane sugar. Agmark has laid down different standards for five grades based mainly on the colour of the sugar. Three standards are laid down by the States and they are the same. Whereas all the States have laid down ash content as 'not more than 0·7%', Agmark and ASC have prescribed this value as 'not more than 0·5%' and 'not more than 0·3%' respectively. Similarly, the minimum sucrose content laid down by the States is 96·5% and that by Agmark 95%. In the case of moisture, while the maximum value is fixed at 1·5% by all the States, the ASC has prescribed this limit at 0·07%.

The Indian Institute of sugar Technology has exhaustively dealt with the quality of sugar and laid down 11 colour standards and 8 grain standards for crystal sugar and 3 colour

standards for crushed sugar. The Central Committee for Food Standards have approved and recommended these standards.

Gur:—*Gur* (from sugarcane) has been defined by four States of which Orissa has also included in its definition the *Gur* obtained from palmyra or date tree. These States have prescribed uniform standards as regards moisture content, insoluble solids and total sugars, whereas the Agmark has not given any chemical standards except in the case of Extra Special White Label for which insoluble solids content has been prescribed as "not more than 0·2%." The Central Committee for Food Standards at its seventh meeting held in 1953 recommended detailed specifications for *gur* which include also minimum sucrose content and total ash. At its eighth meeting held in February 1954, the Committee amended clause (*i*) in the specification for *Gur* (*vide* page 105) to read as follows: (*i*) Total sugar not less than 90% and sucrose not less than 70%.

Suji:—Though *suji* or *soji* (wheat semolina) is consumed in one form or other all over the country, ASC is the only authority which has prescribed specifications for this commodity. However, these specifications deal with the moisture and ash contents only. Since *Suji* is an important product, it is necessary that standards for gluten content, acidity and insoluble ash should be prescribed.

Lately, a *Suji*-like product prepared from tapioca is introduced in the market. So far no Authority has prescribed standards for this commodity. It is suggested that in this case suitable chemical standards such as values for nitrogen content and crude fibre, colour index and acid insoluble ash should be prescribed.

Tea:—Fifteen authorities, including ASC have prescribed certain chemical standards for tea. Standard for moisture has been prescribed by Travancore and ASC as "not more than 10% and 9%" respectively. Of the 12 States who have prescribed values for water extract, 10 have prescribed as "not less than 30%." whereas Assam and Mysore have prescribed as "not less than 35% and 40%" respectively. The ASC has not prescribed any value for this standard. As regards the total ash, all the States have prescribed this value as ranging from 4 to 1%. The ASC has given this value as "not more than 6%." Whereas all the States have given the

figure for water-soluble ash as "not less 40%" of the total ash, Jaipur (Rajasthan) and Assam have given this value as "not less than" 43 and 50% respectively. Again, the ASC has not prescribed any value for this standard. The value for ash insoluble in dil.HCl is given by 5 States as 1·0%, whereas the ASC has prescribed this value as 0·5%. Only two authorities *viz.* Bombay and Mysore have given ranges for alkalinity of ash as 1·3–2·0% and 1·7–2·0% respectively. It is understood that the India Tea Market Expansion Board suggested some time ago that the standards in the various provinces should be raised to the level of those prescribed by Assam. Even these standards do not contain values for theobromine and caffeine contents and do not prohibit the presence of extraneous colouring matter in tea.

Turmeric:—Definition and chemical standards for turmeric are given by four States only. Uttar Pradesh and the Central Committee for Food Standards have stipulated that turmeric shall be free from damage by insect pests. Uttar Pradesh is the only State which has prescribed six chemical standards for this commodity. Bombay, Madras and Uttar Pradesh have stipulated that turmeric powder shall not contain lead chromate and other artificial colouring matter. Bombay, Madras and Uttar Pradesh have fixed the maximum limit for lead in turmeric powder as 5 p.p.m., whereas the Central Commttee for Food Standards, at its sixth meeting in 1951, recommended this limit at 2·5 p.p.m.

Vanaspati:—Hydrogenated vegetable oil (Vanaspati) is a fairly new product in India. Its manufacture increased considerably during World War II to meet the needs of the Armed Forces. At present, it is an important established industry. Seven authorities *viz.*, Bihar, Bombay, Madhya Pradesh, Travancore, Uttar Pradesh and Agmark, included in their Food Rules certain specifications for Vanaspati. In order to control effectively the manufacture, stock and sale of Vanaspati, the Government of India passed the Vegetable Oil Products Control Order in 1947, prescribing detailed standards for Vanaspati (*Vide* pp. 123-25). According to this Order, groundnut oil, sesame oil and cottonseed oil are permitted to be used in the manufacture of Vanaspati. As regards flavouring ingredients, the Order permits the use of seven synthetic flavours, either singly or in combination, in a total quantity not exceeding

25 p.p.m. Addition of any colour resembling that of ghee is prohibited. Other harmless colouring matters may be added with the prior approval of the V.O.P. Controller, Government of India. Addition of "not less than 5% sesame oil" in Vanaspati is made obligatory in order to check the adulteration of ghee (clarified butter fat) with Vanaspati. In a recent amendment, the addition of 300 I.U. of synthetic vitamin A per ounce of Vanaspati has been made compulsory.

Vinegar :—Six States have prescribed acetic acid content of vinegar as "not less than 4 gms. per 100 c.c." which is also the value recommended by the Central Committee for Food Standards in 1944. Travancore, which has fixed this as the only standard for vinegar, has given this value as 4–6%. Total solids content is prescribed by four States. These values range from 1·5 to 2%. The figures for minimum ash content have also been prescribed by 4 States and vary from 0·18 to 2·0%. As regards the permissib e limit for the presence of arsenic in vinegar, Bihar and Uttar Pradesh have given this as "not more than 1·5 p.p.m." and Bombay has also prescribed as "not more than 0·0143 mg. per 100 c.c." of vinegar. The P_2O_5 content in vinegar has been uniformly prescribed as "not less than 0·06%" by four States. Only two States *viz.* Bihar and Uttar Pradesh have prescribed value for nitrogen content in vinegar as "not less than 0·04%." It may be mentioned that all the standards by Bihar and Uttar Pradesh are in conformity with those recommended by the Central Committee for Food Standards in 1944.

Walnuts and almonds: Amongst nuts, only walnuts and almonds have been defined by one authority, *i.e.*, the Army Service Corps.

Other edible nuts, including the cashewnut which is extensively grown in India, have not been dealt with by any authority. It may be stated that in the case of all nuts which are sold in the market either in shell or as shelled-nuts, suitable standards should be prescribed.

Wheat flour atta: Twelve authorities including the Agmark and the ASC have prescribed 2–5 specifications for *atta* which is the coarse wheat flour of high degree of extraction. None of them have given all the five specifications. The most common specifications given are the minimum gluten content, which is

uniformly 8·0%, and the maximum ash content which varies from 2·0 to 2·75%. These values are in conformity with those prescribed by the Food Adulteration Committee. The Agmark has laid down specifications for 3 grades of *atta*, the value for the maximum ash content varying from 1·25 to 2·30%.

The limit for moisture content of *atta* has been laid down by 3 States which is 13% and by the ASC as 12%. The limit for crude fibre in *atta* has been prescribed by Bombay and Madhya Pradesh as 13·0% while Agmark for *chakki* grade *atta* has given a value ranging from 1·50 to 2·50%. The only authority which has prescribed extraction percentage and mesh size for *atta* as well as acidity ("not more than 0·35%) is the Army Service Corps.

Maida: Chemical standards for *Maida* which is fine wheat flour of low degree of extraction, up to a maximum limit of 75% extraction, have been prescribed by 8 authorities including the ASC. Specification for gluten has been laid down by 5 authorities as "not less than 8·0%" which is the same as recommended by the Food Adulteration Committee (1937). The value of this standard is common to both *atta* and *maida*. The maximum limit for ash content of *maida* has been given in several States as "not more than 1%", while in the case of *atta*, the value ranges from 1·25 to 2·75%. The Food Adulteration Committee has recommended this value for *maida* as "not more than 1%." The ASC has however prescribed values for ash content ranging from 0·45 to 0·7% for different extraction flours (20–75%). Agmark has not prescribed any specification for *maida*. The ASC is the only authority which has prescribed specifications for moisture and acidity limits in *maida*.

Colours, Flavours and Preservatives: Most of the States have generally stated that no harmful colour, flavour or preservative should be added to foodstuffs offered for sale. However, in the case of certain commodities, they have laid down specific rules in this regard. A review of the same is given below:—

Butter:—Butter is the only commodity for which all the Authorities with the exception of Bombay, PEPSU, Punjab and Uttar Pradesh, have laid down that it may be made with or without the addition of innocuous colouring matter. Travancore is the only State which has stated that the colouring matter–

"annato" may be added to butter. However, in the case of cow's butter the addition of all colouring matter is prohibited.

As regards preservatives in butter, all the States mentioned above except Madhya Pradesh permit the use of salt or other innocuous preservatives. Mysore and Cochin, however, do not permit the use of any preservative other than salt for butter.

Ghee:—Bihar, Travancore, Uttar Pradesh and Agmark are the only authorities who have stated that no extraneous colouring matter should be added to ghee.

All the above authorities (with the exception Agmark) have also laid down that no preservative should be added to ghee.

Cheese:—Madras and Orissa are the only States who have laid down that cheese may be made with or without the addition of salt or other innnocuous preservative or innocuous colouring matter.

Coffee:—Bihar, Madhya Pradesh, Madras and Uttar Pradesh have specifically stated that coffee, green, raw or unroasted shall be free from any artificial colouring matter and from any coating, facing and glazing substance.

Turmeric:—Bihar, Bombay, Madras and Uttar Pradesh prohibit the use of any harmful colouring matter in turmeric. The last three States have specifically mentioned that no lead chromate should be added to turmeric.

Vanaspati:—Dealing with Vanaspati (hydrogenated oil), Bihar has stated that no harmful colouring or flavouring matter should be added to it. Travancore and Uttar Pradesh permit the addition of diacetyl to an extent not more than six parts per million. Besides, Uttar Pradesh has listed a number of flavouring agents of which the use is permissible singly or in combination, in such a proportion as not to exceed 25 parts per million (*Vide* p. 134).

Vinegar:—Bihar, Bombay, Travancore and Uttar Pradesh do not permit the addition of any foreign substance or colouring matter except caramel in wood-vinegar.

Uttar Pradesh has laid down that prescribed permissible colouring or flavouring substances may be used in the case of aerated waters, confectionery, fruit syrup, ice-candy and ice cream besides other food products already mentioned in the foregoing paragraphs.

The use of saccharine in prescribed proportions is permitted in aerated water, in Bombay and in ice cream and ice-candies in Punjab, but not in Orissa and Travancore where it is considered an adulterant.

Uttar Pradesh has prohibited the use of saccharin, saxin, dulcin, glucin or other synthetic sweetening matter unless the addition to or presence of any such substance in food is specifically permitted. Except Uttar Pradesh, no other Authority has prescribed or prohibited the use of specific flavouring materials in foods. Detailed rules regarding the category and dosages of natural or synthetic flavouring substances or their combinations require to be framed on an all-India basis for all food products.

Bombay, Orissa and Uttar Pradesh have specified 19 articles of food-stuffs to which preservatives *viz.*, sulphur-dioxide or benzoic acid may be added. Permissible limits have also been prescribed in each case. It may be noted that Uttar Pradesh prohibits the use of more than one kind of preservative in any food-stuff.

As regards the colouring matters, Bombay and Orissa have given an identical list of prohibited colouring matters including metallic colours. Orissa and Uttar Pradesh have specified the colours which may be added to food; so also, Uttar Pradesh has given a list containing all the colours specified by Orissa and a few more in addition. The Central Committee for Food Standards have exhaustively dealt with this subject in their fifth Meeting held in 1950. The Committee recommended that the 18 colours which were permitted in the existing food laws of the U.S.A. could be adopted as permissible colours, in addition to vegetable colouring matters and pigments naturally occuring in edible fruits and vegetables. The Committee also recommended that the use of inorganic colouring matters in food-stuffs should be banned. In their recent meeting held in 1954, the Committee have restricted the number of permissible sythetic colours to five.

Labelling of foodstuffs : The labelling of foods, either pre-packed or others, is an important subject which has been dealt with by almost all the Authorities. There are provisions made in the food laws of various States, which make it an offence to give, with certain articles of food, labels which wrongly describe the foods or are otherwise misleading as to the nature, substance

or quality of foods. Labels have been prescribed by some States for dried and condensed milk, tea, coffee, ghee and other fats and foods containing preservatives as well as adulterated foods, but in the case of other articles of food the rules are hardly comprehensive. As regards condensed and dried milk, Bengal is the only State which has prescribed that the words "Free from harmful bacteria" should be written on the label. In the case of skimmed milk, condensed or dried, Bengal, Bihar, Orissa and Uttar Pradesh have specified that the label should contain the words "Unfit for babies". However, other States have not stipulated such conditions. Although the present rules cover generally the nature, substance and quality of foods, there are no specific provisions made to deal with exaggerated or often unjustifiable claims about the nutritional or dietary values of packed foods. The rules do not appear to insist either on an accurate statement of the composition or ingredients of the food, or on warranty date up to which the food is considered as safe or fit for human consumption. It is advisable that the Authorities should review the present position of labelled food products and declare, on an all-India basis, all the foods that require labelling. Labelling codes of practice will have to be evolved preferably in consultation with informed trade opinion for such articles of food. It is also to be indicated that advice through official sources may be made available to manufacturers and traders on correct labelling of specific items of food. Further protection to the public will be ensured if attention is given to checking the purity and composition of the foods having declaratory labels, especially when the presence of harmful constituents, *e,g.*, heavy metals, is suspected, or suggestions as to the vitamins or minerals content in foods are made. It may be emphasized, however, that in this task of controlling food labels or preventing misleading ones and regulating the compositions of foods, it is as necessary to secure the co-operation of manufacturers as the enforcement of food laws. Such a procedure will improve the general standard of labelling and advertisement, and at the same time the public will be fully protected as to the quality, composition and nutritional value of the foods they buy.

Enforcement of Food Laws: Of the 22 States in India, 19 have furnished information regarding the number of samples examined, the number of samples found adulterated during a

period of three years and the number of convictions made as a result of legal proceedings against persons adulterating food products.

On examining Table No. II (on p. 174) it is seen that in Bikaner (Rajasthan), figures regarding the enforcement of food laws, and in Bihar, Hyderabad, Madhya Bharat, Madras, PEPSU and Cochin (Travancore-Cochin) figures regarding convictions made are not available for the period 1950-51 to 1952-53. However, except in the case of Bikaner (Rajasthan) figures for number of samples found adulterated are obtained from all the States. It is evident from the table that the percentage of convictions is always smaller than that of samples found adulterated. This may be attributable to either delays in the disposal of the cases or some of them ending in acquitals. In either case, such state of affairs requires to be remedied. The Food Adulteration Committee examined this question and recommended that the State Governments should take necessary steps "to facilitate the speedy disposal of such cases." The percentage of convictions on the basis of samples found adulterated (last column of Table No. II, page 174) does not bear relation to that of the samples found adulterated and that it shows a wide variation from State to State. As regards the number of samples, Bombay, Uttar Pradesh, Madras, Punjab, Delhi, and Jodhpur (Rajasthan), have examined more than 10,000 samples, the highest being in Bombay where a total of 109, 125 samples were examined during 1950-53.

An examination of Table I shows that milk is one of the commodities which is most commonly examined by several States. Nevertheless, depending upon the usage and other circumstances, some States have concentrated their attention on certain other coommodities also, *i.e.*, Bengal, Bihar and Assam on mustard oil, Madhya Pradesh on groundnut oil and ghee, Jodhpur (Rajasthan) on ghee and Uttar Pradesh on edible oils. A few States have also examined samples of some, but not all, commodities like buttur, curd, *Khoa*, tea, coffee *atta*, *maida*, sago, bread, turmeric, saffron, spices, Indian sweets, aerated waters and vinegar. It may be mentioned that Bombay is the only State which has examined "prepared tea" and that this has resulted in convictions in several cases. All the same, it is clear from the Table that not all the food-stuffs that are sold in the market are examined by the Authorities. Since majority

of food-stuffs lend themselves to easy adulteration, it is extremely important that the scope of sampling should be extended to all or to as many food-stuffs as possible and necessary action taken under the provisions already made in the Food Adulteration Acts of various States. Wherever such provisions do not exist for certain articles of food, it is further necessary that chemical Standards should be laid down for the latter and action taken to enforce the law in the interests of public health.

APPENDIX I

The Bombay Prevention of Adulteration Act, 1925 (Bombay Act V of 1925) is in operation in the following municipal areas:

Abu Road, Ahmedabad, Ahmedabad Cantt., Ahmednagar, Amalner, Amreli, Ankleshwar, Baroda, Barsi, Belgaum, Bhagalkot, Bhusaval, Bijapur, Bilimora, Bombay, Boroygh Chalisgaon, Broach, Bulsar, Chopda, Dabhoi, Dakore, Dhari, Dharwar, Dhinoj, Dhulia, Dohad, Erandol, Faizpur, Gadag Bedgeri, Godhra, Guledgud, Hubli, Igatpuri, Ilkal, Jalgoan, Jambusar, Kadi, Kalol, Kalyan, Kapadwanj, Karad, Karjan, Kolhapur, Mahabaleswar, Malegaon, Manmad, Mehasana, Miraj, Nadiad, Nadurbar, Nasik, Navasari, Panchagani, Pandharpur, Patan, Petlad, Poona, Poona Cantt., Radhanpur, Rajpipla, Ratnagiri, Ravder, Sangli, Satara, Savda, Sawantawadi, Shirpur, Sholapur, Sidhupur, Surat, Thana, Trimbak, Vadanagar, Vijapur, Viramgaum, Visnagar, Vyara, Umreth, Wai.

APPENDIX II

The Madras Prevention of Adulteration Act, 1918 is in force in the following municipal areas and Panchayats in Madras besides corporation of Madras:

Municipal areas: Adoni, Amalapuram, Ambur, Anakapalle, Anantapur, Aruppukotti, Arni, Bapatla, Bellary, Bheemunipatham, Beemavaram, Bodinayakanur, Chidambaram, Chingleput, Chirala, Chittoor, Cochin Coimbatore, Coonoor, Cuddalore, Cuddapah, Devakottai, Dharapuram, Dindigul, Eluru, Erode, Gobichettipalyam, Gudivada, Gudiyatham, Gudur, Guntakal, Guntur, Hindupur, Hospet, Kakinada, Kancheepuram, Karaikudi, Karur, Kodaikanal, Kozhikode, Kumbakonam, Kurnool, Madhurai, Mangalore, Mannargudi, Masulipatanam, Mayuram, Malapalayam, Mettupalyam, Nagapattinam, Nandyal, Narasaraopet, Nellore, Ootacamund, Palamcottah, Palani, Peddapuram, Pollachi, Prodattur, Rajahmundry, Rajapalyam, Rasipuram, Salur, Selam, Shivakasi, Srikakulam, Srirangam, Srivilliputtur, Tanjore, Tellicherry, Tenali, Tindivanam, Tiruchirapalli, Tirunelvali, Tirupathur, Tirupati, Tiruppur, Tiruvallur, Tiruvarur, Todpatri, Tuticorin, Udipi, Udumalpet, Vaniyambadi, Vellore, Vijayawada, Villupuram, Virudhunagar, Vishakapatnam, Vizianagaram, Walajapet.

Panchayats: Akividu, Alandoor, Allinagaram, Ambasamudram, Arcot, Ariyalur, Arkonam, Avanashi, Avanigodda, Ayakudy, Ayyampet, Badlagundu, Badvel, Bhavani, Bhuvanagiri, Bobbili, Chinnamanur, Chodavaram, Courtallam, Cumbum, Dharmapuri, Dharmavarm, Dhone, Ettayapuram, Giddalloui (Kurnool), Gooty, Gudur (Krishna Dt.), Harpanahalli, Harur, Idappadi, Jaggayyapet, Jamalamedugu, Jayakondam, Kadayanallur, Kadiri, Kalahasti, Kallakurichi, Kallidaikurichi, Kandukur, Kasaragod, Kavali, Kilakarai, Koilpatti, Kondanur, Kotagiri, Kovvur (Nellore), Kovuur (West Godavari Dt.), Kulitalai, Kuppam, Kurichi, Lalgudy, Madanapalli, Madanapall, Sanitorium, Madhurantakam, Manaparai, Mandapeta, Mangalagiri, Markapur, Melur, Mudukulathur, Musiri, Namakal, Nannilam, Narasapatham, Narasapur, Nayudupet, Nellikuppam, Nidavole, Nidubrolu, Nilakottai, Nuzvid, Palakonda, Pallathur, Palmaner, Panruti, Papanasam, Paramakudi, Parvathipur, Pattukottai, Penukonda, Pitapuram, Polavaram, Ponnur, Poonamalle, Pulivendla, Puliyangudi, Punganur, Puttur, Rajampet, Ramachandrapuram, Rameswaram, Ramnad, Ranipet, Rayachooti, Rayadrug, Razole, Repalle, Samalkot, Sankarankoil, Sattanpalle, Sattur, Satyamangalem, Shevaroys, Sholavandan, Sirkali, Sivangage, Sompeta, Srivakkuntam, Sulurpet, Tadepalligudem, Tanuku, Tenkasi, Tiruchendur, Tiruchengode, Tirukoilur, Tirumalai hills, Tiruvottiyur, Tirumangalam, Tirupattur, (Ramanathapuram Dt.) Tiruthuraipundi, Thiruttani, Tiruvadimarudur, Tiruvaiyar, Tiruvur, Tuni, Turaiyur, Uravakonda, Usilampatti, Vayalpad, Venkatagiri, Vellamamchili, Vetapalam, Vickramasingapuram, Viravanallur, Vridhachalm, Yemiganur.

APPENDIX III

The Bihar Prevention of Food Adulteration Act, 1947 (Bihar) Act V of 1948) is in force in the following local areas in Bihar.

Aguanighat, Akbarnagar, Akbarpur, Amda Bazar, Amoi, Araria, Arrah, Baghra, Bahadurganj Bazar, Baisi Bazar, Baleshwar Asthan, Banmakhi Bazar, Bansi, Barahat, Bareoi, Barh, Barhi Bazar, Barsoi Bazar, Barwaih, Basaitha, Baskinath, Baunsi (Bharat) Sondiha, Bazidpur, Begusarai, Behariganj, Behat, Beripatti, Bermo Bazar, Bettiah, Bhabua, Bhagalpur, Bhapatiahi, Bharpura, Bhaunathpur, Bhendaria, Bherki Sahenganj Belhar, Bhowanipur Hat, Bibiganj, Bihar,

Bihpur Babhangawa, Biroria, Bihta, Birpur, Butheria, Buxar, Chaibassa, Chainpanagar, Chakradharpur, Chandan Jaipur, Chanderdehi, Chandwa, Chapra, Chatra, Chatterpur, Chintaman Chak, Colgong, Dalkotha Bazar, Daltonganj, Darbhanga, Dargha Rosera, Daspara, Daudnogar, Deoghar, Deoghara, Dharamganj, Digha, Dinapore, Dinapore Cant., Dokahar Bazar, Domchanch Bazar, Domer, Dumka, Dumraon, Durga Asthan, Fatwa, Gamharia Bazar, Ganapatganj, Gangta, Garh Banaili, Gaya, Ghogaddiha, Girja Asthan, Gopalpur, Gridih, Gulabbagh, Haidernagar, Hajipur, Halai Hat, Harhanj, Haridanga Bazar, Harihargani, Harlakhi, Hasua, Harsanpur Road Station, Hatia, Haveli Kharagpur, Hazaribagh, Islamnagar, Islampur Bazar, Jadia, Jagdispur, Jahangira, Jamalpur, Jamshedpur, Jamtara, Jamui, Jarmuudi Bazar, Jasidih (excluding certain areas) Jathmalpur, Jhalda, Jhanjharpur, Jogbani Bazar, Kahagola, Kalyani, Kanauli Bazar, Kangoi, Kapleswar Asthan, Karmatanr Bazar, Katihar, Katora, Kewar, Kewas Nizamat, Khagaria, Khajauli, Kharci, Kharik, Khataghat, Khunti, Khutauna, Kishanganj, Kodarma Bazar, Kotulpukur Bazar, Kursela Bazar, Kueswar Asthan, Ladania, Lakhisarai, Lalganj, Lankaha, Lankahi, Lesliganj, Loha, Madan Forbesganj, Madanpur Bazar, Madhepur, Madhubani, Madhupur, Madhurapur Jhandapur, Madhwapur, Mahadeo, Mahijan Bazar, Manatu, Maner, Manihari Bazar, Manika, Markach Bazar, Mihijam, Mirzapur, Mirzachowki Bazar, Mobarkpore, Mohiuddinagar, Moinpur, Mokamah, Monghyr, Motihari, Murliganj, Muzaffarpur, Nagaruntari, Narhan, Narhia, Natghoghi Bazar, Navihat, Nawabganj Bazar, Nawadoha Kajuli Bazar, Pademlila, Pajwara, Pakur, Pandaul, Panki, Patan, Patna City, Pathargama, Patory, Phinsia Bazar, Phulparas, Phulwari, Pirpanty, Pothia, Purnea, Purulia, Rachhuar, Raghopur, Raghunathpur, Rajgir, Rajaun, Rajghat, Rajghat Rishikund, Rajnagar, Ramgarh Bazar, Ramka, Rampatti, Rampur, Ranchi, Raniganj Bazar, Raxaul Bazar, Reserah, Revalganj, Saborer, Saguna, Saharsa, Sahebganj, Samastipur, Sambhuganj, Sarsi, Sarso, Satanpur, Saurath, Semarbani, Seraikella, Shabajpur, Shankarpur, Sheora, Sikandarpore, Sikhariackak, Silanth Dilipatti, Simaria, Simariaghat, Simrahi Bazar, Singheshwar Asthan, Sini Bazar, Sirauna, Sitamarahi, Siwan, Sonaili Bazar, Sringri Rishi, Suiabathan, Supaul Arzuganj, Surajagarha, Tamer, Tandwa, Tehri Bazar, Tejpur, Thakurganj Bazar, Thikari, Tinpahar Bazar, Tribeniganj, Woini.

This Act is also in force in the following areas.

(*i*) Union Committee/Board areas.

Amarpur, Aurangabad Bach, Bagaha, Banka, Barki Suriya, Bundu, Chainpatia, Chichroawn, Dalsingasarai, Dhanwar, Gangania, Garhwa, Gogri, Gola, Gumla, Husainabad, Ichak, Jainagar, Jehanabad, Kasba, Latehar, Madhipura, Mehsi, Mirzaganj, Muzaffarpur, (District Board) Nangachia, Nawadah, Nirmali, Rajauli, Ratanpur, Segauli, Shikarpur, Sultangunj, Supaul, Telaiya, Tilakpur, Warsaliganj,

(*ii*) Notified Committee area.

Dehri Dalmianagar, Doranda, Dumara, Kharswan, Lautaha, Sahar,.

APPENDIX IV

The Central Provinces and Berar Prevention of Adulteration Act, 1919 (Act 2 of 1919) as amended in 1949 is in force in the areas specified below:

Achalpur, Akola, Akola Taluk (whole), Akot, Anjangaon, Amravati, Amravati Cantt,, Arvi, Bainsdehi Tahsil, Balaghat, Balapur, Basim, Bastar Dist (whole), Betul, Betul-Tahsil, Bhandara, Bhatapara, Bilaspur, Bina - Etawa, Burhanpur, Buldana, Chanda, Chikali, Chindwara, Chota Chindwara, Damoh, Deoli, Deori, Dhamangaon, Dhamtari, Digras, Ellichpur, Gadarwaa, Gondia, Gudhiyari, Harda, Hinganghat, Hoshangabad, Hoshangabad Tahsil, Itarsi, Jabalpur, Jabalpur Cantt., Jabalpur Dlstrict, Kamptee, Kamptee Cantt., Karanja, Katol, Khamgaon, Khandwa, Khapa, Khurai, Mandala, Mowar, Multai Tahsil, Murwara, Murtizapur, Nagpur, Narsingpur, Nirod, Pandhurna, Pandharkawada, Pulgaon, Raigarh, Raipur, Sagar, Saoner, Sausaa, Seoni Malwa, Shegaon, Sihora, Sirali, Sohagpur, Tumsar, Umrer, Wardha, Worara, Wun,

The Act is also in force in the following notified areas :

Betul Bazar, Bilaspur Dist., Champa, Chindwara District, Deulgaon Raja, Durg, Multai, Piparia, Telhara.

APPENDIX V

The Mysore Prevention of Adulteration Regulation, 1921 (Regulation IX of 1921) is force in the following municipal areas:—

Agaramamballi, Ajjampur, Alur, Arasikere, Arkalgud, Bagapalli, Banavar, Bangalore Corporation, Bangarpet, Bhadravathi, Challakere, Chamarajanagar, Channapatna, Chikamagalur, Chikkaballappur, Chikanaikanahalli, Chintamani, Davangere City, Devanahalli, Frenchrocks (Pandavapura) Goribidanur, Gubbi, Harihar, Hassan, Heggadadevanakote, Hiriyur, Holenarasipur, Honnali, Hosakote, Jagalur, Kadur, Kolar, Kolar Gold Fields, Konnanur, Koppa, Koratagere, Krishnarajapet, Maddur, Madhugiri, Malavalli, Mandya, Molakalmuru, Mudigere, Mulbagal, Mysore City, Nanjangud, Narasimharajapura, Nyamathi, Periyapatna, Ramanagaram, Ramasamudra, Sagar, Saklespur, Saragur, Shikaripur, Shimoga, Shiralakoppa, Sravanabelagola Sringeri, Srinivasapur, Srirangapatna, Tarikere, Thyamagondlu, Tiptur, Tumkur, Yelahanka, Vijayapuram, Yeladur.

APPENDIX VI

The Orissa Prevention of Adulteration and Control of Sale of Food Act, 1938 (Orissa Act X of 1938) is in force in the following areas:

1. *Municipal areas*: Panchpir (Sub-Division areas), Parlakimedi, Puri, Sambalpur, Bamanghaty (Sub-Division areas), Berhampur, Cuttack, Jajpur, Kendrapara.

2. *Notified Areas*: Angul, Aska, Banki, Barapalli, Bargarh, Belgunta, Bhubaneswar, Chatrapur, Ganupur. Garapur, Gopalpur, Jeypore, Khariar, Khurda, Koraput, Kotpad, Nawarangapur, Padmapur, Rayagada, Russelkonda, Satyrbadi, Surada, Varanasi.

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ERRATA

Page	*Line*	*For*	*Read*
13	3	phosporic	phosphoric
25	Coloumn 8 in the table	Aqueous extract per g.	Acidity of aqueous extract per g.
28	15 in N. B.	lenugreek	fenugreek
40	11 in foot-note	41°C	40°C
90	10	hall	shall
114	12	course	coarse
118	33	wholesomes	wholesome
119	clause 2 (*d*)	porposes	purposes
122	16	incosistent	inconsistent
123	Last line in footnote	ethyl caprilate	ethyl caprylate
132	36	light green. S. F.	light green SF yellowish
136	34	deletarious	deleterious
137	2	ethyl caprilate	ethyl caprylate
181	26	indentical	identical
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195	10	exception Agmark	exception of Agmark